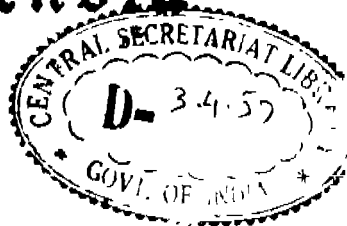


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MINISTRY OF LABOUR NOTIFICATION

New Delhi, the 20th March 1957

S.R.O. 1001.—The following draft of the Indian Metalliferous Mines Regulations, 1957, which the Central Government proposes to make in exercise of the powers conferred by section 57 of the Mines Act, 1952 (35 of 1952), and in supersession of the Indian Metalliferous Mines Regulation, 1926, is published as required by sub-section (1) of section 59 of the said Act, for the information of all persons likely to be affected thereby; and notice is hereby given that the said draft will be into consideration on or after the 1st July, 1957. Any objection or suggestion which may be received from any person with respect to the said draft before the date so specified will be considered by the Central Government.

DRAFT REGULATIONS

CHAPTER I

PRELIMINARY

Regulation 1. (Preliminary).—(1) These regulations may be called the Indian Metalliferous Mines Regulations, 1957—

- (2) They extend to the whole of India except the State of Jammu and Kashmir.
- (3) They shall apply to every mine of whatever description other than a coal or oil mine.
- (4) They shall come into force on—

Regulation 2. (Definitions).—In these regulations, unless there is anything repugnant in the subject or context—

- (1) "the Act" means the Mines Act, 1952;
- (2) "the Regional Inspector" means the Inspector of Mines in charge of the region or local area or areas in which the mine is situated or the group or class of mines to which the mine belongs, over which he exercises his powers under the Act;
- (3) "the District Magistrate" in relation to any mine, means the District Magistrate or the Deputy Commissioner as the case may be, who is vested with the executive powers of maintaining law and order in the district in which the mine is situated: Provided that in the case of a mine which is situated partly in one district and partly in another, the District Magistrate for the purposes of these regulations shall be the District Magistrate authorised in this behalf by the Central Government;

- (4) "Committee" means a committee appointed under Section 13 of the Act;
- (5) "Schedule" means a Schedule appended to these regulations;
- (6) "Form" means a form as set out in the First Schedule;
- (7) "Quarter" means a period of three months ending on the 31st March, 30th June, 30th September or 31st December;
- (8) "Month" means a calendar month;
- (9) "Metalliferous mine" includes every mine other than a coal or oil mine.
- (10) "Manager" means a person possessing the prescribed qualifications and appointed in writing by the owner or agent to be in charge of a mine under section 17 of the Act, and includes a Mine Superintendent if appointed under said section.
- (11) "Underground Manager" means a person possessing a Manager's Certificate appointed in writing by the owner, agent or Manager to be in charge of the whole of the underground working or a specified portion thereof, under the direction of the manager and includes an Underground Agent;
- (12) "Foreman" means a person possessing a Manager's or Foreman's Certificate and appointed by the manager in writing, under any designation whatsoever, to perform the duties of supervision or control in a mine or part thereof and includes a Shift Boss;
- (13) "Mate" means a person possessing a Manager's, Foreman's or Mate's Certificate and appointed by the Manager in writing, under any designation whatsoever, to perform the duties of a mate under these regulations, and includes an Overseer or Head mestri;
- (14) "Blaster" means a person possessing a Manager's, Foreman's Mate's or Blaster's Certificate and appointed by the manager in writing to perform the duties of a blaster under these regulations, and includes a Shotfirer;
- (15) "Official" means a person appointed in writing by the owner, agent or manager to perform duties of supervision in a mine or part thereof and includes an Underground Manager, a Foreman, a Mate, an Engineer and Surveyor;
- (16) "Competent person" means a person who has attained the age of 21 years and who has been duly appointed in writing by the owner, agent or manager to supervise or perform certain work, or to supervise the operation of certain machinery, plant or equipment, and responsible for the duties assigned to him, and includes a Blaster;
- (17) "Banksman" means a person appointed to superintend the lowering and raising of persons, tools and materials and the transmission of signals at the top of a shaft or winze;
- (18) "Bellman" means a person appointed to superintend the raising and lowering of persons, tools, materials and the transmission of signals at any landing;
- (19) "Signalman" means a person appointed to transmit signals;
- (20) "Machinery" means—
 - (i) any locomotive and any stationary or portable engine, air-compressor, boiler or steam apparatus which is, and
 - (ii) any such apparatus, appliance or combination of appliances intended for developing, storing, transmitting converting or utilising energy which is, and
 - (iii) any such apparatus, appliance or combination of appliances if any power developed, stored, transmitted, converted or utilised thereby is, in the opinion of a Regional Inspector, used or intended for use in connection with mining operations;
- (21) "Material" includes rock, debris, stone, minerals, ore or any other material;
- (22) "Tub" includes a wagon, car, truck, hutch, bandy, bucket or any other vehicle for conveying material;
- (23) "Shaft" means a vertical or inclined way or opening leading from the surface to workings belowground or from one part of the workings belowground to another and includes an incline;

- (24) "Winze" or "Rise" means a small shaft in underground workings, either vertical or inclined;
- (25) "Landing" means any floor or platform in a shaft or winze, which is an authorised stopping place of the cage or other means of conveyance, and includes a plat;
- (26) "Road" means any part of a passage or gallery belowground which is maintained in connection with the working of a mine;
- (27) "Working place" means any place in a mine to which any person has lawful access;
- (28) "Face" means the moving front of any working place or the inbye end of any drive, level, crosscut, rise or winze;
- (29) "Support" includes timber-work, masonry, packwalls, sandpacks, ironwork, or any other form of support;
- (30) "Ventilating district" means such part of a mine belowground as has an independent intake airway commencing from a main intake airway, and an independent return airway terminating at a main return airway; and in the case of a mine or part thereof which is ventilated by natural means, it includes the whole mine or part;
- (31) "Auxiliary fan" means a forcing fan or an exhausting fan, used belowground wholly or mainly for ventilating a face or faces or blind ends;
- (32) "Approved safety lamp" and "approved electric torch" mean respectively, a safety lamp or an electric torch manufactured by such firm and of such type as the Chief Inspector may from time to time specify by notification in the Official Gazette;
- (33) "Gas" includes fume or vapour;
- (34) "Explosive" shall have the same meaning as is assigned to that term in the Indian Explosives Act, 1884, or any Act amending or repealing the same;
- (35) "Permitted explosive" means an explosive manufactured by such firm and of such type as the Chief Inspector may from time to time specify by notification in the Official Gazette;
- (36) "Socket" means a shot-hole or part of a shot-hole remaining after being charged with explosives and blasted, and which is not known to be a misfired shot-hole;
- (37) "Mis-fire" means the failure to explode of an entire charge of explosives in a shot-hole;
- (38) "River" means any stream or current of water, whether seasonal or perennial, and includes its banks extending up to the highest known flood level;
- (39) "Public road" means a road maintained for public use and under the jurisdiction of any Government or local authority;
- (40) "Railway" means a railway, or any portion of a railway for the public carriage of passengers, animals or goods, and includes:
 - (a) all land within the fences or other boundry marks indicating the limits of the land appurtenant to a railway;
 - (b) all lines or rails, sidings or branches worked over for the purpose of or in connection with a railway;
 - (c) all stations, offices, warehouses, wharves, workshops, manufactories, fixed plant and machinery and other works constructed for the purpose of or in connection with a railway ; and
 - (d) all ferries, ship, boats and rafts which are used on inland waters for the pupose of traffic of a Railway and belong to or are hired or worked by the authority administering the railway.

CHAPTER II

RETURN NOTICES AND RECORDS

Regulation 3. (Notice of opening).—(1) The notice required by section 16 of the Act shall be submitted in Form I of First Schedule.

(2) When a mine has been opened, the owner, agent or manager shall forthwith communicate the actual date of opening to the Chief Inspector and to the Regional Inspector.

Regulation 4. (Quarterly Returns).—On or before the 14th day of January, April, July and October in every year the owner, agent or manager shall submit to the Chief Inspector and the Regional Inspector correct returns in respect of the preceding month in Form II of First Schedule.

Regulation 5. (Annual Returns).—(1) on or before the 20th day of February in every year, the owner, agent or manager shall submit to the District Magistrate and to the Chief Inspector annual returns in respect of the preceding year in Form III of First Schedule.

(2) If a mine is abandoned or working thereof is discontinued for a period exceeding 60 days or if a change occurs in the ownership of a mine, the returns required under sub-regulation (1) shall be submitted within 30 days of abandonment or change of ownership or within 90 days of discontinuance, as the case may be: Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, allow such returns to be submitted up to any date not later than the 20th day of February in the year following that to which they relate;

Provided further that nothing in this sub-regulation shall be deemed to authorise the submission of any return later than the 20th day of February in the year following that to which it relates.

Regulation 6. (Notice of abandonment or discontinuance).—(1) When it is intended to abandon a mine or part or to discontinue working thereof for a period exceeding 60 days, the owner, agent or manager shall, not less than 40 days before such abandonment or discontinuance, give to the Chief Inspector and the Regional Inspector a notice stating the reasons for the proposed abandonment or discontinuance and the number of persons likely to be affected thereby: Provided that when on account of unforeseen circumstances, a mine or part is abandoned or discontinued before the notice under clause (a) has been given or when without previous intention the discontinuance extends beyond a period of 60 days, the notice shall be given forthwith.

(2) Notwithstanding anything contained in sub-regulation (1), when it is intended to abandon, or discontinue for more than 60 days, any workings below-ground over which is situated any property vested in the Government or any local authority or any railway or any building or permanent structure not belonging to the owner, the owner, agent or manager shall, not less than 30 days before the date of such abandonment or discontinuance, give notice of his intention to the Chief Inspector and the Regional Inspector.

(3) When a mine or part has been abandoned or working thereof has been discontinued over a period exceeding 60 days, the owner, agent or manager shall within seven days of the abandonment or of the expiry of the said period, give to the Chief Inspector, the Regional Inspector and the District Magistrate notice in Form I of First Schedule.

Regulation 7. (Notice of re-opening).—(1) When it is intended to reopen a mine or part after abandonment or after discontinuance for a period exceeding 60 days, the owner, agent or manager shall, not less than 30 days before resumption of mining operations, give to the Chief Inspector, the Regional Inspector and the District Magistrate notice in Form I of First Schedule.

(2) When a mine or part has been re-opened, the owner, agent or manager of the mine shall forthwith communicate the actual date of re-opening to the Chief Inspector and the Regional Inspector.

Regulation 8. (Change of ownership and addresses etc.).—(1) (a) When a change occurs in the name or ownership of a mine or in the address of the owner, the owner, agent or manager shall, within seven days from the date of the change, give to the Chief Inspector and the Regional Inspector a notice in Form I of First Schedule: Provided that where the owner of a mine is a member of a firm or other association of individuals, a change—

- (i) of any partner in the case of a firm,
- (ii) of any member in the case of an association,
- (iii) of any director in the case of a public company, or
- (iv) of any shareholder in the case of a private company,

shall also be intimated to the Chief Inspector and the Regional Inspector, within seven days from the date of the change.

(b) When the ownership of a mine is transferred, the previous owner or his agent shall make over to the new owner of his agent, within a period of 30 days of the transfer of ownership, all plans, sections, reports, registers and other records maintained in pursuance of the Act, and of the regulations, rules, bye-laws and orders made thereunder, and all correspondence relating to the working of the mine relevant thereto; and when the requirements of this clause have been duly complied with, both the previous and the new owners or their respective agents shall forthwith inform the Chief Inspector and the Regional Inspector in writing.

(2) When any new appointment is made of an agent, manager underground manager, surveyor or an engineer, if any, or when the employment of any such person is terminated, or when any change occurs in the address of any agent or manager, the owner, agent or manager shall, within seven days from the date of such appointment, termination or change, give to the Chief Inspector and the Regional Inspector a notice in Form I of First Schedule.

Regulation 9. (Notice of Accident).—(1), (a) When there occurs in or about a mine—

- (i) an accident causing loss of life or serious bodily injury;
- (ii) an explosion or ignition;
- (iii) a spontaneous heating or outbreak of fire, or appearance of smoke or other indication of heating or outbreak of fire;
- (iv) influx of noxious gases;
- (v) an occurrence of inflammable gas in a mine to which Regulation 142 does not apply;
- (vi) an irruption of water;
- (vii) a rock-burst in workings belowground;
- (viii) a premature collapse of any part of the workings;
- (ix) any accident due to explosives;
- (x) a breakage or fracture of ropes, chains, headgear pulley or axle or bearing thereof, or other gear by which persons are lowered or raised;
- (xi) an overwinding of cages or other means of conveyance while men are being lowered or raised;
- (xii) a breakage or fracture of any essential part of winding engine, crank shaft, coupling, bearing, gearing, clutch drum or drum shaft; or failure of emergency brake;
- (xiii) a bursting of any equipment containing steam, compressed air or other substance at high pressure; or
- (xiv) a breakage, fracture or failure of any essential part of any machine or apparatus whereby the safety of persons may be endangered;

the owner, agent or manager shall forthwith inform the Regional Inspector about the occurrence by telephone or express telegram or by special messenger; and shall also, within 24 hours of every such occurrence, give notice thereof in Form IV of First Schedule to the District Magistrate, the Chief Inspector and the Regional Inspector; and shall simultaneously post a copy of the notice on a special notice board outside the office of the mine and shall ensure that the notice is kept on the board in a legible condition for not less than 60 days from the date of such posting.

(b) When an accident causing loss of life or serious bodily injury occurs in or about a mine in connection with the generation, storage transformation, transmission, supply or use of electrical energy, the owner, agent or manager shall also forthwith inform the Electrical Inspector of Mines by telephone, express telegram or special messenger.

(2) If death results from any injury already reported as serious under sub-regulation (1), the owner, agent or manager shall forthwith inform the Regional Inspector about the death by telephone, express telegram or special messenger; and shall also, within 24 hours of the death, give notice thereof to the District Magistrate, the Chief Inspector and the Regional Inspector.

Regulation 10. (Notice of Disease).—Where any person employed in a mine contracts any disease notified by the Central Government in the Official Gazette, the owner, agent or manager shall, within three days of his being informed of the disease, sent notice thereof in Form V of First Schedule to the District Magistrate, the Chief Inspector, the Regional Inspector and the Medical Inspector of Mines.

CHAPTER III

EXAMINATIONS AND CERTIFICATES OF COMPETENCY AND OF FITNESS.

Regulation 11. (Board of Mining Examinations).—(1) For the purposes of these regulations there shall be constituted a Board of Mining Examinations, hereinafter referred to as "the Board". The Board shall consist of the Chief Inspector, who shall be the Chairman of the Board, and four members possessing technical qualifications and practical experience in metalliferous mines fitting them to serve on the Board, who shall be appointed by the Central Government for a term of three years: Provided that on the expiry of any term for which he had been appointed, any member shall be eligible for re-appointment.

(2) A member of the Board (other than the Chairman) shall receive such remuneration as the Central Government may fix.

(3) An Inspector nominated by the Chief Inspector shall act as a Secretary to the Board.

Regulation 12. (Certificates granted by the Board).—(1) Certificates under these regulations shall be granted by the Board, and all decisions of the Board in respect of the grant of such certificates shall be final.

(2) Certificates granted by the Board shall be valid throughout the territories to which these regulations extend, and shall be of the following kinds:

- (a) Manager's first class certificate of competency to manage a metalliferous mine (in these regulations referred to as a First Class Manager's Certificate);
- (b) Manager's second class certificate of competency to manage a metalliferous mine (in these regulations referred to as a Second Class Manager's Certificate);
- (c) Surveyor's certificate of competency to survey the workings of a metalliferous mine (in these regulations referred to as a Surveyor's Certificate);
- (d) Foreman's certificate of competency to carry out inspections and duties as required under these regulations (in these regulations referred to as a Foreman's Certificate);
- (e) Mate's certificate of competency to carry out inspections and duties as required under these regulations (in these regulations referred to as a Mate's Certificate);
- (f) Winding enginemen's I class certificate of competency to drive a winding engine (in these regulations referred to as a I Class Engine-driver's Certificate);
- (g) Winding enginemen's II class certificate to drive a winding engine (in these regulations referred to as a II Class Engine-driver's Certificate);
- (h) Blaster's certificate of competency to fire shots in a metalliferous mine (in these regulations referred to as a Blaster's Certificate); and
- (i) Certificate of competency to test for the presence of inflammable gas (in these regulations referred to as a Gas-testing Certificate).

Regulation 13. (Examinations and Examiners).—(1) Certificates shall be granted to successful candidates after such examination and in such form as the Board may stipulate.

(2) The examinations shall be held at such times and at such centres as may be fixed by the Board, and shall be conducted by examiners who shall be appointed by the Board.

(3) The examiners so appointed shall be subject to the orders of the Board in respect of all matters relating to the conduct of the examinations, and shall receive such remuneration as the Board, with the sanction of the Central Government, may fix.

(4) The Board may make bye-laws as to the conduct of the examinations and as to the granting of certificates of fitness as required under these regulations, and shall, so far as may be practicable, provide that the standard of knowledge required for the grant of certificates of any particular class and the standard of medical fitness shall be uniform throughout the territories to which these regulations extend.

(5) Every bye-law made by the Board under this regulation shall be published in the Official Gazette; and no such bye-law shall have effect until three months after the date on which it was so published.

Regulation 14. (Submission of applications).—(1) Applications for an examination conducted by the Board shall be made to the Board not less than 60 days prior to the date fixed for the examination and on a form supplied for the purpose.

(2) Notice regarding the date and place of the examinations for the Manager's, Surveyor's and Foreman's certificates shall be published under the order of the Board, in such periodicals as the Board may direct, not less than 30 days prior to the date fixed by the Board for receiving applications.

Regulation 15. (Age and general qualifications of candidates).—(1) (a) No person shall be admitted as a candidate at any examination held by the Board unless he is 21 years of age.

(b) No person shall be admitted as a candidate at any examination for a Manager's, Surveyor's, Foreman's, Mate's or Blaster's Certificate unless he holds a valid first-aid certificate of the standard of the St. John Ambulance Association (India); Provided that if any candidate satisfies the Board that he has not had sufficient opportunity to obtain such first-aid certificate, the Board may admit him to the examination on such conditions, if any, as it thinks fit to impose.

(c) Every application for any examination as aforesaid shall be accompanied by:

(i) a certificate of age granted by a Gazetted Officer or by the headmaster of a school of a Higher Secondary or equivalent standard; Provided that in case of a person holding a matriculation or equivalent certificate, such certificate shall be submitted as evidence of age;

(ii) a medical certificate of general fitness, including powers of eyesight and hearing, obtained not more than three years prior to the date of his application, from a qualified medical practitioner not below the rank of a Civil Assistant Surgeon; and

(iii) a certificate from some person of good repute as to the general good conduct and sobriety of the candidate.

(2) No person shall be admitted as a candidate at any examination for a Manager's or Surveyor's Certificate unless he has passed the matriculation examination of a recognised university, or its equivalent, and for a Foreman's, Mate's, Engine-driver's or Shotfirer's Certificate unless he satisfies the Board that he is literate.

(3) No person shall be admitted as a candidate at any examination for a Manager's or Foreman's Certificate unless he has obtained a Mate's and a Gas-testing Certificate: Provided that if a candidate satisfies the Board that he has not had sufficient opportunity to obtain the Mate's or Gas-testing Certificate, the Board may admit him to the examination on such conditions, if any, as it thinks fit to impose.

Regulation 16. (Practical experience of candidates for Managers' Examinations).—(1) No person shall be admitted as a candidate at any examination for a First or Second Class Manager's Certificate unless he has satisfied the Board that he has had practical experience in a metalliferous mine for a period of not less than five and three years, respectively: Provided that in the case of a candidate who has received a diploma or degree in mining engineering at an educational institution approved in that behalf by the Board, such period shall be reduced to three and two years, respectively.

(2) The nature of the practical experience required of a candidate for a Manager's Certificate shall be experience approved by the Board and gained in one or other of the following capacities in a metalliferous mine having an average employment of not less than 300 persons:

(a) as a workman, or a mining apprentice having direct practical experience of getting ore and of stonework, timbering and repairing; or

(b) as an underground official.

Regulation 17. (Practical experience of candidates for Surveyor's Examinations).—No person shall be admitted as a candidate at any examination for a Surveyor's Certificate unless he has satisfied the Board that he has had two years' practical experience of surveying, of which at least six months shall have been

practical experience of surveying the workings of a mine approved by the Board: Provided that such period shall be reduced to six months in the case of a candidate who has attended classes in theoretical and practical surveying at an educational institution approved in that behalf by the Board.

Regulation 18. (Practical experience of candidates for Mate's and Blaster's examination).—(1) No person shall be admitted as a candidate at any examination for a Mate's or Blaster's Certificate unless he has satisfied the Board that he has had practical experience in a metalliferous mine for a period of not less than three and two years, respectively: Provided that in the case of a candidate for Blaster's Certificate, such practical experience shall include experience in shot-firing for a period of at least six months:

Provided further that such period shall be reduced to a period not less than one year in the case of a candidate who has received a diploma or degree in mining engineering at an educational institution approved in that behalf by the Board

(2) The nature of practical experience required of candidates for the aforesaid examination shall be experience of a type approved by the Board.

Regulation 19. (Reduction in period of experience).—In the case of a candidate part of whose experience has been obtained in a coal mine, the period of practical experience in a metalliferous mine as prescribed in regulations 16, 17 and 18 may be reduced by the Board to such an extent and subject to such conditions as it may prescribe.

Regulation 20. (Practical experience of candidates for Engine-driver's Certificates).—No person shall be admitted as a candidate at any examination for an Engine-driver's Certificate unless he has satisfied the Board that he has had practical experience of driving a winding engine or as an assistant to a qualified winding engine driver for a period of at least one year: Provided that no person shall be permitted to appear at any examination for a I Class Engine-driver's Certificate unless he holds a II Class Engine-driver's Certificate.

Regulation 21. (Examination Fees).—(1) Fees on the following scale shall be paid in respect of every application for admission to an examination:

- (a) in the case of an examination for a First Class Manager's Certificate—Rs. 50
- (b) in the case of an examination for a Second Class Manager's Certificate—Rs. 30
- (c) in the case of an examination for a Surveyor's Certificate—Rs. 20
- (d) in the case of an examination for a Foreman's Certificate—Rs. 10
- (e) in the case of an examination for a Mate's Certificate—Rs. 5
- (f) in the case of an examination for a I Class Engine-driver's Certificate—Rs. 10
- (g) in the case of an examination for a II Class Engine-driver's Certificate—Rs. 5
- (h) in the case of an examination for a Blaster's Certificate—Rs. 3
- (i) in the case of an examination for a Gas-testing Certificate—Rs. 2

(2) The amount of any fee referred to in sub-regulation (1) less the following amounts, shall be returnable to the person by whom it has been paid if the application of such person for admission to the examination is rejected:

- (a) Rupee one in the case of the fee paid for admission to an examination for a Blaster's or a Gas-testing Certificate.
- (b) Rupees two in the case of the fee paid for admission to an examination for an Engine-driver's, Mate's or Foreman's Certificate.
- (c) Rupees five in any other case.

(3) The Chief Inspector may permit the refund:

- (a) of any fee paid under sub-regulation (1) where the candidate has died before the examination or where the fee has been erroneously paid; and

(b) of any amount paid in excess of that specified in sub-regulation (1).

Regulation 22. (Exchange Certificates).—(1) The Board may grant to any person holding a Manager's, Surveyor's, Overman's or Foreman's, Sirdar's or Mate's, or Shotfirer's or Blaster's Certificate granted under any Act for the regulation of mines for the time being in force in any other country or under the Coal Mines Regulation 1957 made under the Act, a certificate of similar class under these regulations if the person satisfies the Board with documentary evidence that he possesses the requisite experience and produces a certificate from some person of good repute as to his general good conduct and sobriety: Provided that in the case of an applicant for a Manager's Certificate he has undergone, for a period of not less than six months, a course of practical training in India in the manner and in the mines approved by the Chief Inspector for the purpose, and has also passed such examination as the Board may stipulate.

(2) If a person intends to apply for the grant of a Manager's Exchange Certificate as provided in sub-regulation (1), he shall, before commencement of his practical training in India, submit to the Chief Inspector an application in a form supplied for the purpose.

(3) Fees on the scale laid down in Regulation 21 shall be paid in respect of any application for a certificate to be issued under this regulation.

Regulation 23. (Service Certificate).—(1) The Board may grant, until such date as may be notified by the Central Government in the Official Gazette, without written examination, a Manager's or Surveyor's Certificate to any person:

(a) who has attained the age of 35 years and who satisfies the Board that he has worked as manager, underground manager or surveyor, as the case may be, of metalliferous mines in India for a period of not less than 10 years, if he has passed a *viva-voce* examination in such subjects as the Board may stipulate; or

(b) who has attained the age of 25 years and has received a diploma or certificate or degree in mining engineering at an educational institution approved in this behalf by the Board, if he satisfies the Board that he has had practical experience of the nature approved by the Board for periods not less than five years, three years or two years for a First Class Manager's Certificate, Second Class Manager's Certificate or Surveyor's Certificate respectively and if he has passed a *viva-voce* examination in such subjects as the Board may stipulate: Provided that not less than six months of the said practical experience shall have been obtained in metalliferous mines in India.

(2) Fees on the scale laid down in Regulation 21 shall be paid in respect of any application for certificates to be issued under this regulation.

Regulation 24. (Validity of old certificates).—Any Engine-driver's Underground Mestri's or Blaster's Certificate granted under the Mysore Gold Mines Regulations, which is valid at the commencement of these regulations shall be deemed respectively to be the equivalent of an Engine-driver's, Mate's or Blaster's Certificate granted under these regulations.

Regulation 25. (Duplicate Certificates).—If any person proves to the satisfaction of the Board that he has, without any fault on his part, lost or been deprived of a certificate granted to him under these regulations, the Board may, upon realisation of the following fees, and subject to such terms and conditions as it thinks fit, cause a copy of the Certificate to be delivered to him:

(a) in the case of Manager's or Surveyor's Certificate—Rs. 5

(b) in the case of any other Certificate—Rs. 2

The word "DUPLICATE" shall be stamped across every such copy.

Regulation 26. (Metal checks).—(1) The Chief Inspector shall issue to every person to whom the Board grants a Mate's or Blaster's or Gas-testing Certificate, a metal check marked with the registered number of the certificate.

(2) The person to whom such metal check is issued shall, so long as the corresponding certificate remains in force, retain such check in his immediate possession while on duty, and shall not transfer it or dispose of it in any way. In the event of the corresponding certificate being suspended or cancelled under Regulation 29, the check shall be returned as prescribed in Regulation 29.

(3) No person other than the holder of the corresponding certificate for the time being in force shall be in possession of a metal check issued under sub-regulation (1).

(4) If any person proves to the satisfaction of the Chief Inspector that he has, without any fault on his part, lost or been deprived of the metal check issued to him under sub-regulation (1), the Chief Inspector may, on receipt of a fee of one rupee and upon such terms and conditions as he may stipulate, cause a second metal check bearing the registered number of his certificate to be delivered to him. The letter "D" shall be stamped on the reverse of every such check.

Regulation 27. (Certificates to be delivered to the manager).—When the holder of a Foreman's, Mate's, Engine-driver's, Blaster's or Gas-testing Certificate is employed in a mine in a capacity which requires the possession of the said certificate, he shall deliver such certificate to the manager of the mine in which he is for the time being employed. The manager shall, in exchange for the certificate, deliver to such person a receipt for the same; he shall retain the certificate in the office at the mine so long as the holder thereof is so employed, and shall return it to the holder on his ceasing to be so employed.

Regulation 28. (Court of Enquiry into fitness of a person to hold a Manager's or Surveyor's Certificate).—(1) If in the case of a person who is the holder of a Manager's or Surveyor's Certificate, a representation is made to the Central Government by the Chief Inspector that the person has been convicted of an offence made punishable by the Act with fine which may extend to Rs. 500 or more or with imprisonment, or is, by reason of incompetence or gross negligence or misconduct in the performance of his duties under the Act or under the Regulations, Rules, Bye-laws and Orders made thereunder, unfit to continue to hold such certificate, the Central Government may appoint a Court to hold an inquiry to determine as to whether or not such person is fit to continue to hold such certificate.

(2) The following provisions shall have effect with respect to the constitution and procedure of the Court holding such an enquiry—

- (a) the Court shall consist of a person or persons appointed by the Central Government and may conduct the inquiry either alone or with the assistance of an assessor or assessors so appointed.
- (b) The Central Government shall pay to the person or persons constituting the Court and to any assessor appointed to assist the Court such remuneration and allowance as it may fix.
- (c) The inquiry shall be public and shall be held at such place as the Central Government may appoint.
- (d) The Central Government may appoint any person to undertake the conduct of the case on their behalf.
- (e) The Central Government shall, before the beginning of the inquiry, furnish to the person whose fitness to continue to hold a certificate is to be inquired into, a statement of the case on which the inquiry is instituted.
- (f) The said person may appear at the inquiry either in person or by counsel, solicitor or agent approved by the Court, and may give evidence or call such witnesses as he thinks fit.
- (g) If a majority of the persons constituting the Court thinks fit the person whose conduct is under inquiry may be required to deliver up his certificate at any time before or during the inquiry; and such person shall be bound to comply with such requisition, unless he shows sufficient cause to the contrary.
- (h) The Court shall, for the purpose of the inquiry, have all the powers of a civil court under the Code of Civil Procedure, 1908 (5 of 1908) for the purpose of enforcing the attendance of witnesses and compelling the production of registers, plans, sections, reports and other records and material objects; and any person required as aforesaid to attend or to furnish any information shall be deemed to be legally bound to do so within the meaning of Section 176 of the Indian Penal Code (45 of 1860).
- (i) The Court, for the purpose of the inquiry, may exercise such of the powers of an Inspector under the Act as it may think necessary or expedient.

- (j) The Court shall, subject to the foregoing, have powers to regulate the procedure of the inquiry and to adjourn it from time to time
- (k) A person appearing as a witness before the Court shall be entitled to be paid by the Central Government such expenses as would be allowed to a witness attending a civil or criminal court.

(l) At the conclusion of the inquiry, the Court shall send to the Central Government a report containing a full statement of the case together with its opinion thereon and such account of or extracts from, the evidence as it may think fit; and if it considers that the certificate in question should be cancelled or suspended, it shall add a recommendation to that effect. In the event of disagreement between the members of the Court, a dissentient from the opinion of the majority may forward a separate report to the Central Government with a statement of his recommendations.

(3) The Central Government may, on the recommendation of the Court, cancel or suspend a certificate; and if it does so, the fact of such cancellation or suspension shall be notified in the Official Gazette and if the certificate or a duplicate thereof granted under Regulation 25, is produced, be endorsed upon it.

Regulation 29. (Suspension of a Foreman's, Mate's, Engine-driver's, Blaster's or Gas-testing Certificate).—(1) If in the opinion of the Regional Inspector, a person to whom a Foreman's, Mate's, Engine-driver's, Blaster's or Gas-testing Certificate has been granted is guilty of incompetence, negligence or misconduct in the performance of his duties, the Regional Inspector may, after giving the person an opportunity to explain his conduct, suspend his certificate.

(2) When the Regional Inspector has suspended a Certificate under sub-regulation (1), he shall, by requisition addressed to the manager of the mine concerned, obtain the certificate so suspended and the corresponding metal check if any, and thereafter shall report the suspension to the Board. The Regional Inspector may, if he thinks fit, recommend to the Board that the Certificate so suspended be cancelled.

(3) The Board may, after such inquiry as it thinks fit, either confirm or modify or reduce the suspension, or cancel the certificate; and the decision of the Board which shall be recorded on the certificate shall be final.

Regulation 30. (Validity of Foreman's, Mate's, Engine-driver's, Blaster's and Gas-testing Certificates).—(1) No Foreman's, Mate's, Engine-driver's or Blaster's Certificate shall remain valid for a period of more than five years unless the certificate bears an endorsement by the Regional Inspector to the effect that the holder thereof has within the preceding five years, been certified by a qualified medical practitioner appointed by the Chief Inspector to be free from deafness, defective vision or any other infirmity, mental or physical, likely to interfere with the efficient discharge of his duties.

(2) An application in respect of an examination of fitness in pursuance of sub-regulation (1) shall be made to the Chief Inspector, accompanied by a fee of five rupees.

(3) No Gas-testing Certificate shall remain valid for a period of more than three years, unless it bears an endorsement by the Regional Inspector to the effect that the holder thereof has, within the preceding three years, passed another examination in gas-testing.

Regulation 31. (Retirement age for Managers and Officials etc.).—(1) No person shall act as a manager or an official or a blaster or a winding engineman in a mine after attaining the age of 60 years unless he has obtained within the preceding one year, a medical certificate of fitness certifying him fit to carry out the duties prescribed for him in the Act and in the regulations, rules, bye-laws and orders made thereunder; Provided that if the Chief Inspector or the Regional Inspector is of the opinion that a person as aforesaid, though less than 60 years of age, is medically unfit to carry on the duties prescribed for him in the Act, and in the regulations, rules, bye-laws and orders made thereunder, the Chief Inspector or the Regional Inspector may, by an order in writing, require such person to obtain a medical certificate of fitness within such period not exceeding three months, as he may specify therein; and no such person shall continue to act in any capacity as aforesaid after the period so specified unless he has obtained a medical certificate of fitness.

(2) The medical certificate of fitness as aforesaid shall be obtained from such authority and in such manner as the Board may specify in bye-laws made by them for the purpose.

CHAPTER IV

Inspectors and Mine Officials

Regulation 32. (Qualifications of Inspectors).—(1) After the coming into force of these regulations, no new person shall be appointed as Chief Inspector unless he holds a degree or diploma in mining engineering of an educational institution approved by the Central Government and also a First Class Manager's Certificate granted under Coal Mines Regulations, 1957.

(2) After the coming into force of these regulations, no person shall be appointed as an Inspector unless he holds a degree or diploma in mining engineering of an educational institution approved by the Central Government and also a First Class Manager's Certificate granted either under these regulations or under the Coal Mines Regulations, 1957: Provided that—

- (i) in relation to electrical machinery installed in mines, a person holding a degree or diploma in electrical engineering of an educational institution approved by the Central Government may be so appointed;
- (ii) in relation to other machinery or mechanical appliances installed in mines, a person holding a degree or diploma in mechanical engineering of an educational institution approved by the Central Government may be so appointed; and
- (iii) in relation to the provisions of the Act and of the regulations, rules and byelaws made thereunder which relate to matters concerning the health and welfare of persons, a person holding a degree or diploma in medicine, surgery and/or in social science or labour welfare, as the case may be, of an educational institution approved by the Central Government may be so appointed.

(3) The Central Government may appoint any person whom it considers competent, as an Inspector notwithstanding that such person does not possess the qualifications prescribed in that behalf by this regulation and may likewise insist on qualifications higher than such qualifications.

Regulation 33. (Definitions).—For the purpose of this Chapter—

- (a) every system of workings belowground inter-connected in such a manner that communication is practicable from any one part of the system to any other part by means of channels or drifts belowground shall be deemed to constitute one mine. If access from one system of such workings belowground to another such system shall be deemed to constitute a separate mine: Provided that where two or more systems of workings belowground not belonging to the same owner, for any special reasons are inter-connected, each such system shall be deemed to constitute a separate mine:

Provided further that where special conditions exist, the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, permit or require the division of any one such system into two or more separate mines.

- (b) the expression 'average employment' means the average per month of the total employment of the mine or mines during the preceding quarter.

Regulation 34. (Qualifications and appointment of managers).—(1) (a) No mine shall be opened, worked or reopened unless there is a manager of the mine, being a person duly appointed and having such qualifications as are required by these regulations.

(b) No person shall act or be employed as a manager unless he is 23 years of age and is paid by, and is directly answerable to, the owner or agent of the mine.

(2) Except as hereinafter provided in sub-regulation (6), and subject to the provisions of sub-regulation (3), no person shall act or continue to act, or be

appointed, as manager of a mine or mines the average employment of which corresponds to the figures given in column (i) of the table below unless he holds the corresponding qualifications given in column (ii) thereof:

(i)	(ii)
(a) In excess of 300 in opencast workings and/or 100 in workings below ground.	A First Class Manager's Certificate.
(b) In excess of 100 but not exceeding 300 in opencast workings and/or in excess of 25 but not exceeding 100 in workings below-ground.	A First or Second Class Manager's Certificate.
(c) In any other case.	A First or Second Class Manager's Certificate or a Manager's Permit granted under sub-regulation (5).

Provided that the Chief Inspector, may, by an order in writing, direct that in the case of any such mine as is referred to in clause (b) of the table, the manager thereof shall be the holder of a First Class Manager's Certificate, and that in the case of any such mine as is referred to in clause (c) of the table, the manager thereof shall be the holder of a First or Second Class Manager's Certificate:

Provided further that if any mine-undertaking consists of two or more separate mines and if in the opinion of the Chief Inspector they are not sufficiently near to one another to permit of daily personal supervision being exercised by one manager, he may, by an order in writing, require the appointment of a separate manager for each of such mines.

(3) When under the provisions of sub-regulation (2), a person holding a First or Second Class Manager's Certificate has been appointed as manager, a person holding lower qualifications shall not, except with the previous permission in writing of the Chief Inspector and subject to such conditions as he may specify, be so appointed during the succeeding twelve months, notwithstanding any reduction in the average employment of the mine.

(4) No person shall act, or be appointed, as manager of more than one mine except with the previous permission in writing of the Chief Inspector and subject to such conditions as he may specify. No such permission shall have effect for a period exceeding 12 months, unless renewed. The Chief Inspector may at any time by an order in writing, vary or revoke any such permission, and such order shall be final and shall remain operative until withdrawn.

(5) (a) The Chief Inspector may, after holding such examination as he may deem necessary and subject to such conditions as he may specify, grant to any person holding a Foreman's Certificate, a permit (in these regulations referred to as a Manager's Permit) authorising such person to act as the manager of any specified mine, the average employment of which does not exceed 100 in opencast workings and/or 25 in workings belowground.

(b) A Manager's Permit shall be valid only for such period, not exceeding 12 months, as may be specified therein. The Chief Inspector may renew any Manager's Permit for a further period not exceeding 12 months notwithstanding that such permit has already been so renewed.

(c) A fee of Rs. 10 shall be payable in respect of every application for the grant of a Manager's Permit and of Rs. 5 for every application for renewal thereof.

(d) A Manager's Permit may be cancelled at any time by the Chief Inspector by an order in writing without assigning any reason for such cancellation; and such order shall be final.

(6) The Chief Inspector may, by an order in writing and subject to such conditions as he may specify, authorise any person whom he may consider competent, to act as manager of any mine or mines for a specified period notwithstanding that such person does not possess the qualifications prescribed in that behalf by sub-regulation (2), and may by a like order revoke any such authority at any time, and such order shall be final.

(7) (a) Where by reason of absence or for any other reason, the manager is unable to exercise daily personal supervision or is unable to perform his duties under the Act and under the regulations, rules, bye-laws and orders made thereunder, the owner, agent or manager shall authorise in writing a person whom he considers competent to act as manager of the mine: Provided that—

(i) such person holds a Manager's or Foreman's Certificate;

(ii) no such authorisation shall have effect for a period in excess of 30 days, except with the previous consent in writing of the Chief Inspector; nor without a like consent shall a second authorisation be made to take effect upon the expiry of the first;

(iii) the owner, agent or manager, as the case may be, shall forthwith send to the Chief Inspector and the Regional Inspector a written notice under registered cover intimating that such an authorisation has been made, and stating the reason for the authorisation, the qualifications and experience of the person authorised, and the date of the commencement and ending of the authorisation; and

(iv) the Chief Inspector or the Regional Inspector may, by an order in writing, revoke any authority so granted, and such order shall be final and remain operative until withdrawn.

(b) The person so authorised shall, during the period of such authorisation, have the same responsibility, discharge the same duties, and be subject to the same liabilities as the manager.

(8) (a) No manager shall vacate his office without giving due notice in writing to the owner or agent at least 30 days before the day on which he wishes to vacate his office.

(b) No owner or agent shall transfer, discharge or dismiss a manager unless—
(i) the manager has been relieved by a duly qualified person as prescribed under sub-regulation (2); or

(ii) the manager has been given due written notice of such transfer, discharge, or dismissal at least 30 days before the day on which he is required to vacate his office:

Provided that in case of discharge or dismissal the manager shall have a right of appeal to the Chief Inspector whose decision thereon shall be final and binding upon the owner, agent and manager.

(c) Nothing in sub-regulation (7) shall confer on the owner, agent or manager the right to authorise during any period of such notice, any person not duly qualified to manage the mine under sub-regulation (2), to act as the manager except in case of illness or other causes over which the manager has no control, or with the previous written permission of the Chief Inspector and under such conditions as he may specify: Provided that the Chief Inspector shall not permit any such authorisation for a period exceeding 60 days from the date on which the mine is worked without a manager duly qualified under sub-regulation (2).

(d) A copy of every such notice and authorisation shall forthwith be sent to the Chief Inspector and to the Regional Inspector by registered post.

(9) (a) The owner or agent shall provide reasonable residential accommodation for the manager and the under-ground manager within a distance of three miles from all mine openings; and every manager and underground manager shall reside in the accommodation so provided: Provided that where special difficulties exist which render compliance with these provisions not reasonably practicable, the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, grant exemption from the same.

(b) No manager shall be entrusted by the owner or agent with any work, nor shall he himself perform any work, which will necessitate his frequent or prolonged absence from the mine.

(c) If any dispute arises as to the foregoing clauses of this sub-regulation, it shall be referred to the Chief Inspector whose decision thereon shall be final.

(10) No manager shall act as agent or underground manager or in any other supervisory capacity of another mine.

Regulation 35. (Appointment of under-managers or assistant managers).—In every mine the average employment of which exceeds 800 in opencast workings and/or 250 in workings belowground, the manager shall be assisted by underground managers and/or persons holding Manager's Certificates on a scale of at least one for every 300 persons or less in open-cast workings and/or 100 or

less in workings belowground in excess of the 800 and/or 250 persons aforesaid: Provided that in a mine where the average employment exceeds 2,500 in open-cast workings and/or 750 in workings below ground, at least one of the underground managers or qualified assistants appointed as aforesaid shall hold a First Class Manager's Certificate:

Provided further that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, permit or require the appointment of underground managers or qualified assistants in variation with these provisions.

Regulation 36. (Appointment of engineers).—(1) At every mine where machinery is used, an engineer or other competent person shall be appointed to hold general charge of such machinery, and to be responsible for its installation, maintenance and safe working. A notice of every such appointment, giving the name and full particulars of the qualifications and experience of the person so appointed, shall be sent to the Regional Inspector within seven days of such appointment. In case of any dispute regarding the sufficiency of the qualifications of such engineer or competent person, it shall be referred to the Chief Inspector whose decision thereon shall be final. Provided that after such date as the Central Government may notify in the Official Gazette, no person shall, except with the previous permission in writing of the Chief Inspector and subject to such conditions as he may specify, be so appointed in a mine having an average employment of more than 600 persons in opencast workings and/or 200 in workings belowground unless he holds a degree or diploma in electrical or mechanical engineering of an educational institution approved by the Central Government.

(2) Where by reason of temporary absence or for any other reason, the engineer or competent person appointed under sub-regulation (1) is unable to perform his duties, the manager shall authorise in writing a person whom he considers competent to act in his place: Provided that—

- (a) Notice of every such authorisation shall be sent to the Regional Inspector forthwith;
- (b) No such authorisation shall have effect for a period in excess of 30 days except with the previous consent in writing of the Regional Inspector; and
- (c) The Regional Inspector may, by an order in writing, revoke any authority so granted and such order shall remain operative until withdrawn.

Regulation 37. (Appointment and qualifications of senior officials).—(1) At every mine, one or more foremen shall be appointed to hold general charge of all the districts of the mine on each working shift.

(2) Every person employed as an official subordinate to the manager and superior to the mate shall hold either a Manager's Certificate or a Foreman's Certificate.

Regulation 38. (Appointment of surveyors).—(1) At every mine having workings belowground, a person not less than 23 years of age and holding a Surveyor's Certificate shall be appointed to be the surveyor for carrying out the surveys and levellings and for preparing the plans and sections required by the regulations and rules. A notice of every such appointment, giving the name and full particulars of the qualifications of the person so appointed, shall be sent to the Regional Inspector within seven days of such appointment.

(2) No person shall undertake the duties of a surveyor of more than one mine or any other duties of supervision under the regulations without the previous permission in writing of the Regional Inspector, and subject to such condition as he may specify. The Regional Inspector may at any time, by an order in writing, vary or revoke such permission; and such order shall remain operative until withdrawn.

Regulation 39. (Appointment of officials and competent persons).—(1) The manager shall appoint such number of competent persons, including officials and technicians, as is sufficient to secure—

- (a) adequate inspection of the mine and the equipment thereof;
- (b) a thorough supervision of all operations in the mine;
- (c) the installation, running and maintenance, in safe working order, of all machinery in the mine; and

(d) the enforcement of the requirements of the Act and of the regulations, rules, bye-laws and orders made thereunder

If any dispute arises as to the foregoing, it shall be referred to the Chief Inspector whose decision thereon shall be final

(2) It shall be the responsibility of the manager to see that the persons so appointed are competent to perform the duties assigned to them. No person shall be so appointed unless he is paid by the owner or agent and is answerable to the manager

(3) Copies of all appointments made under sub-regulation (1) shall be entered in a bound paged book kept for the purpose. A list of all such competent persons shall also be maintained

(4) Without prejudice to the requirements of sub-regulation (2), every manager on taking over charge of a mine, shall satisfy himself that all persons already appointed under sub-regulation (1) are competent to perform the duties assigned to them, and if he finds them competent, he shall either countersign their authorisations or issue fresh ones. If a manager considers a person to be incompetent to carry out certain duties under the Act and under the regulations, rules, bye laws and orders made therein, and there is a dispute in the matter, the case shall be referred to the Chief Inspector whose decision thereon shall be final and binding on both parties

Regulation 40. (General management).—(1) The owner, agent and manager shall provide for the safety and proper discipline of persons employed in the mine.

(2) No instructions in regard to matters concerned with the management and working of a mine shall be given to any person except by or under the authority of, or in consultation with and through, the manager

CHAPTER V

DUTIES AND RESPONSIBILITIES OF WORKMEN, COMPETENT PERSONS AND OFFICIALS ETC

Regulation 41. (Duties of persons employed in mines).—(1) (a) Every person shall strictly adhere to the provisions of the Act and of the regulations, rules, bye-laws and orders made thereunder, and to any order or direction issued by the manager or an official with a view to the safety or convenience of persons or the proper discipline of the mine, not being inconsistent with the Act and these regulations, nor shall he neglect or refuse to obey such orders or directions

(b) No person shall interfere with, impede or obstruct any other person in the discharge of his duties, nor shall he offer or render any service, or use any threat, to any other person with a view to preventing him from complying with the provisions of the Act and of the regulations, rules, bye laws and orders made thereunder or from performing his duties faithfully. If any person who receives any such offer or threat, fails to inform the manager forthwith, he shall also be guilty of a breach of these regulations

(2) No person shall go belowground unless he wears a hard or bamboo hat of a type approved by the Chief Inspector

(3) (a) No person shall, except with the authority of an official, remove or pass through any fence, barrier or gate, or remove or pass any danger signal

(b) Subject to any directions that may be given by an official, no person shall, except for some justifiable purpose, go into any part of the mine other than that part in which he works, or travel to or from his working place by any road other than the proper travelling road

(4) No person shall, while on duty, throw any stone or other missile with intent to cause injury, or fight or behave in a violent manner

(5) Every person receiving any injury in the course of his duty shall, as soon as possible, report the same to an official

(6) Every person shall, immediately before proceeding belowground and immediately after returning to the surface have his name recorded in the register maintained under sub-section (4) of Section 48 of the Act

(7) No person shall sleep whilst on duty

(8) (a) No person shall test for inflammable gas with a naked lamp, or brush or waft out inflammable gas. Should any person having a flame safety lamp find himself in the presence of inflammable gas, he shall not throw the lamp away or attempt to blow it out; but shall shelter it, hold it near the floor, avoid jerking it, and take it steadily into fresh air. Where he cannot take it into fresh air, he shall smother out the light or extinguish it in water.

(b) No person shall, when trying or examining for the presence of inflammable gas with a flame safety lamp, raise the lamp higher than may be necessary to allow the presence of inflammable gas to be detected.

(c) Every person using a safety lamp shall take proper care of it and shall not place it within two feet of the swing of any tool, except in the case of a lamp which is actually worn attached to the body of such person. In the case of a flame safety lamp he shall not place it on the floor unless it is necessary to do so for the safe performance of any particular work; and if the lamp becomes damaged, he shall at once carefully lower the flame until it is extinguished, and shall, at the first opportunity, report the damage to his superior official.

(9) Except when performing overtime work under the Act, no person other than an official shall remain in a mine beyond the period over which his shift continues.

Regulation 42. (Duties of competent persons).—No competent shall—

- (a) depute another person to perform his work without the sanction of his superior official;
- (b) absent himself without having previously obtained permission from such official for the term of his absence or without having been relieved by a duly competent person; and
- (c) without permission from such official performs, during his shift, any duties other than those for which he has been so appointed.

Regulation 43. (Duties of officials).—(1) Every official shall carry out the duties assigned to him by the manager or underground manager in accordance with the provisions of the Act and of the regulations, rules, bye-laws and orders made thereunder.

(2) Every official shall, to the best of his power, see that persons under his charge understand and carry out their respective duties.

Regulation 44. (Duties and responsibilities of managers).—(1) (a) In every mine daily personal supervision shall be exercised by the manager; and in case of workings belowground he shall visit and examine such workings on at least four days in every week to see that safety in every respect is ensured. Of these inspections, one at least in every fortnight shall be made during the night shift: Provided that when owing to any unavoidable cause he is unable to carry out the aforesaid duties or inspections he shall record the reason for the same in the book kept under clause (b).

(b) The manager and the underground manager, if any, shall each record, in a bound paged book kept for the purpose, the result of each of his inspections and every major irregularity or contravention of the provisions of the Act and of the regulations, rules, bye-laws and orders made thereunder observed during the course of such inspection, and the action taken by him to rectify the same.

(2) The manager shall make arrangements for all foremen and other officials to meet him or the underground manager once in every working day for the purpose of conferring on matters connected with their duties.

(3) The manager shall see that a sufficient supply of proper materials and appliances for the purpose of carrying out the provisions of the Act and of the regulations, rules, bye-laws and orders made thereunder and for ensuring the safety of the mine and the persons employed therein, is always provided at the mine; and if he be not the owner or agent of the mine, he shall report in writing to the owner or agent when anything is required for the aforesaid purpose, that is not within the scope of his authority to order. A copy of every such report shall be recorded in a bound paged book kept for the purpose.

(4) The manager shall assign to every competent person his particular duties, shall on his appointment make over to him a copy of the regulations, rules and bye-laws and of any orders made thereunder which affect him, and shall take all possible steps to ensure that every such person understands, carries out and enforces the provisions therein contained.

(5) The manager shall provide every foreman with a tracing, up to a date within one month, showing the workings of the district belowground assigned to him. Where any work of reduction or extraction of pillars or blocks of mineral is being carried out such tracing shall show clearly the order in which such reduction or extraction is to be carried out.

(6) The manager shall examine all reports, registers and other records required to be made or kept in pursuance of the Act or of the regulations, rules, bye-laws and orders made thereunder, and shall countersign the same and date his counter-signature. He may, however, by an order in writing, delegate his duty to an underground manager except in cases where a specific provision is made requiring the manager to countersign a report or register.

(7) The manager shall give attention to, and cause to be carefully investigated, any representation or complaint that may be made to him as to any matter affecting the safety or health of persons in or about the mine.

(8) When any accident resulting in serious bodily injury to any person, or in loss of life occurs in a mine, the manager shall inspect the site of accident as soon as possible, and shall also, either himself or through an underground manager, have an inquiry made into the cause and circumstance of the accident. The result of every such enquiry and a plan of the site of the accident showing details, shall be recorded in a bound paged book kept for the purpose.

(9) The manager may suspend a person who has been found to be guilty of a breach of the provisions of the Act and of the regulations, rules, bye-laws and orders made thereunder, and shall take such disciplinary steps against such a person as the Regional Inspector may require or approve.

Regulation 45. (Duties and responsibilities of underground manager).—The underground manager shall be in charge of the underground workings assigned to him by the manager. He shall also carry out any other duties assigned to him by the manager and during the absence of the manager, shall have the same responsibility, discharge the same duties, and be subject to the same liabilities as the manager.

Regulation 46. (Duties and responsibilities of foreman).—The foreman or other competent person appointed under regulation 37 shall strictly observe the following provisions, namely—

(1) (a) He shall have responsible charge and control of the district of the mine assigned to him by the manager, and shall, while on duty, carry a tracing of the workings of such district.

(b) He shall, in his district, make the inspections and reports required by the regulations.

(c) He shall be responsible to see that the subordinate officials and competent persons in his district carry out their respective duties in a proper manner.

(d) He shall, to the best of his power, enforce in his district the provisions of the Act and of the regulations, rules, bye-laws and orders made thereunder; and shall, subject to the control of the manager and the undermanager or assistant manager, if any, give such directions as may be necessary to ensure compliance with those provisions, and to secure the safety of the district and the safety and proper discipline of the persons employed therein.

(2) He shall see that sufficient supplies of timber, brattice and other necessities required for the safe working of his district are kept in convenient places therein.

(3) (a) He shall see that every air-crossing, stopping, door, brattice and other ventilation device is maintained in good order.

(b) He shall in his district, see that the ventilation is effective; and when brattices or air pipes are required to be used for the ventilation of the working places, he shall see that they are kept sufficiently advanced to ensure that an adequate amount of air reaches the working places.

(4) (a) He shall see that all tracks and tramlines are properly laid, graded and ballasted.

(b) He shall see that the manholes on the haulage planes are kept safe, clear of any obstruction, and properly white-washed.

(c) He shall see that stop-blocks, runaway switches and other safety devices are fixed and used as required under the regulations, that drags or backstays are provided and regularly used behind tubs ascending inclines, and that a sufficient supply of suitable sprags is provided where tubs are loaded on a gradient or lowered down a gradient by hand.

(d) He shall, if he finds any of the ropes, chains, signals, bracks jig wheels, and posts or other apparatus in use in his district to be in an unsafe condition, stop the use of the same forthwith.

(5) He shall give prompt attention to the removal of any danger observed by or reported to him, and shall see that dangerous places are adequately fenced off.

(6) He shall, under the directions of the manager, see that approved safety lamps are used and naked lights excluded wherever and whenever danger from inflammable gas is apprehended.

(7) (a) He shall devote the whole of his time to his duties, and shall visit each working place in his district as often as may be necessary or possible.

(b) He shall not, except for a justifiable cause, leave the mine until he has finished the inspections required under these regulations and any other duties that he is required to perform, or until relieved by a duly appointed substitute.

(c) He shall, if the mine is worked by a succession of shifts, confer with official succeeding him and give him such information as may be necessary for the safety of his district and of persons employed therein.

(8) He shall, at the end of his shift, record in a bound paged book kept for the purpose, a general report on the performance of all his duties during the shift, including anything concerning the proper working of the mine and the safety of persons employed in his district.

(9) He shall be responsible to see that except for the purpose of inspection, examination and repairs, every person other than an official or a haulage attendant travels by the travelling road.

Regulation 47. (Duties and responsibilities of mates).—The mate or other competent person appointed under regulation 116 shall strictly observe the following provisions, namely—

(1) (a) He shall have responsible charge and control of the district of the mine assigned to him by the manager.

(b) He shall take reasonable means to ensure the proper observance of the requirements of the Act and of the regulations, rules, bye-laws and orders made thereunder by persons under his charge; and shall, as soon as practicable, report any contravention thereof to his superior official.

(2) (a) He shall make such inspections and reports as are required by the regulations, and in making such examination, he shall pay particular attention to checking supports.

(b) Except in the case of a mine worked by a succession of shifts, he shall, on completion of the first inspection of the district, proceed to the station appointed under Regulation 116 and instruct all persons as to their places of work and as to any special precaution necessary to be observed by them.

(c) If he finds any person in a place other than the one assigned to him, he may order such person out of the mine, and shall forthwith report the matter to his superior official.

(d) He shall ensure that no inexperienced person is employed on any work except under the supervision of an experienced person.

(3) (a) He shall see that all travelling roads to and working places in his district are made and kept secure.

(b) He shall report to his superior official any deficiency in timber, appliances and other necessaries required for the safe working of the district.

(4) Where either of the two ways affording means of egress from the district to the surface is not ordinarily used for travelling, he shall travel, once at least in every seven days, the whole of such way in order to make himself thoroughly acquainted with the same.

(5) (a) If he observes any dangerous place during the course of his inspections or if any danger is reported to him at a place where work persons are employed, he shall, if the danger cannot be removed forthwith, withdraw all persons from such place and shall not leave such place until the danger has been removed in his presence or all approaches to the place have been securely fenced off.

(b) He shall take care that any dangerous operation is carried out with due precaution, and shall be present throughout whenever any work of clearing falls of ground and setting of supports therein is being carried out.

(c) He shall cause the entrance to every place which is not in actual use or in course of working or extension, to be effectively fenced across the whole width.

(d) If he finds any accumulation of inflammable or noxious gases, he shall carry out the provisions of Regulation 141 and shall not remove such accumulation until he has received instructions in that behalf from his superior official.

(6) He shall have power to send out of the mine any person under his charge infringing or attempting to infringe any provisions of the Act and of the regulations, rules, bye-laws and orders made thereunder, or failing to carry out any direction given with regard to safety, and shall report in writing any such infringement or attempted infringement or failure to the manager or underground manager.

(7) He shall, on receipt of notice of an accident to any person in his district, proceed at once to the place of accident, inspect the place and, if required, supervise the rescue operations and, render first-aid; and shall report or send notice of the accident to the manager or underground manager.

(8) (a) He shall devote the whole of his time to his duties, and shall not leave the mine until the end of the shift or until relieved by a duly appointed substitute.

(b) If the mine is worked by a succession of shifts, he shall, before leaving his district, confer with the sirdar or competent person succeeding him; and shall acquaint him with all matters requiring his personal attention and give him such other information as may be necessary for the safety of his district and of the persons employed therein.

Regulation 48. (Duties and responsibilities of blasters).—The blaster shall—

- (a) carry out his duties in accordance with the provisions of the regulations and bye-laws and of any orders made thereunder with respect to the transport and use of explosives;
- (b) be responsible for the observance by his assistants, if any of such provisions and of any direction with a view to safety which may be given to them;
- (c) not hand over any explosives to any unauthorised person;
- (d) see that clay, sand or other suitable stemming material is available in sufficient quantities at convenient places;
- (e) be present when shots are being charged and shall himself fire the shots; and
- (f) be responsible, when a shot has misfired, for seeing that the place is adequately fenced, and that the provisions of Regulation 167 are strictly observed.

Regulation 49. (Duties of timberman).—The timberman shall carry out the orders of the foreman, mate or other competent person with respect to the securing of hangwall, footwall and back (roof). He shall at once report to the mate or other competent person any shortage of timber in his district. He shall also be responsible to see that wood-cuttings are not left in any working belowground.

Regulation 50. (Duties of fan-attendants).—The person in charge of the main mechanical ventilator shall—

- (a) keep the ventilator running at the speed fixed by the manager;
- (b) examine the machinery and observe the pressure-recording or water gauge and the speed-indicator at intervals of not more than one hour, and shall enter the readings of the indicator in a bound paged book kept for the purpose at the fan-house;
- (c) immediately report to his superior official any stoppage of, damage to, or defect or derangement in the machinery, or any unusual variations in the water-gauge or other indicators; and shall also immediately report any unusual circumstances in regard to mine ventilation which may come to his notice; and

- (d) where the ventilator is continuously operated, shall not leave his post until relieved by a duly appointed substitute.

Regulation 51. (Duties of lamp-room incharges).—The competent person in charge of a safety lamp room—

- (a) shall be responsible for ensuring that all lamps in the safety lamp room are properly maintained in accordance with the provisions of the regulations;
- (b) shall see that the safety lamp room is kept in a neat and tidy condition, and that all damaged and defective gauzes, glasses and other parts of safety lamps are not kept or stored in such room;
- (c) shall see that fire extinguishers or other means of dealing with fires provided in the safety lamp room are in good condition and readily available for use; and
- (d) shall see that all records required by the regulations for the issue, return and maintenance of safety lamps are properly maintained.

Regulation 52. (Duties and responsibilities of surveyors).—(1) The surveyors shall—

- (a) make such accurate surveys and levellings, and prepare such plans and sections, as the manager may direct or as may be required by the Act or by regulations or rules framed thereunder, and shall sign the plans and sections and date his signature;
- (b) be responsible for the accuracy of any plan and section, or tracings thereof, that has been signed by him;
- (c) in form the manager in writing of the full facts when workings of the mine have approached to about 250 feet from the mine boundary or from discused or water-logged workings; and
- (d) draw the attention of the manager in writing to doubts which may exist concerning the accuracy of the plans and sections prepared under these regulations.

(2) Nothing in clauses (c) and (d) of sub-regulation (1) shall absolve the owner, agent or manager of his responsibility under the Act and the regulations and rules made thereunder.

Regulation 53. (Duties and responsibilities of engineers).—The engineer or other competent person appointed for the purpose—

- (a) shall hold general charge of all machinery at the mine;
- (b) shall be responsible for the proper installation, maintenance and safe working of such machinery;
- (c) shall, when any machinery is shifted or newly installed, see that the machinery is given a trial run before it is put into use; he shall be present during every such trial run; and
- (d) shall be present throughout whenever any work of installing, changing or recapping of any winding rope, or of installing, changing or annealing any suspension gear, is being carried on.

Regulation 54. (Duties of winding engineman).—(1) At the beginning of his shift the winding engineman shall examine the engine, brakes and all appliances in his charge, and shall satisfy himself that they are in good working order.

(2) Every winding engineman shall, during his shift, keep the winding engine and apparatus connected therewith properly cleaned and oiled.

(3) The winding engineman shall not allow any unauthorised person to enter the engine room or in any way to interfere with the engine.

(4) The winding engineman shall report immediately to the engineer or other competent person appointed for the purpose any defect which he has noticed in the engine, brake, indicator, drum, rope or other appliances under his charge.

(5) The winding engineman shall thoroughly acquaint himself with, and carefully attend to, the prescribed code of signals; and shall not start the engine until he has received the proper signal to do so. If the signal is indistinct, he shall not start the engine until it has been repeated and he clearly understands it.

(6) The winding engineman shall avoid jerk in starting, running and stopping the engine, and shall cause the cage or other means of conveyance to be brought gently to rest at any stopping place.

(7) While persons are being lowered or raised in the shaft, the winding engine-man shall drive the engine at a reduced speed.

(8) The winding engineman shall not unclutch the drum of his engine until he has assured himself immediately before hand by testing the brake of the drum against the full power of the engine that the brake is in proper condition to hold the load suspended from the said drum. When the drum is unclutched, he shall use the brake only for the purpose of maintaining such drum stationary and shall not lower men or materials from an unclutched drum.

(9) The winding engineman shall on no pretext leave the handle or brake whilst the engine is in motion, or while the cage or other means of conveyance is in mid-shaft in the course of winding or while persons are at work in the shaft.

(10) Whenever any winding engineman has occasion to leave the engine, he shall cut off the power and secure the drums with the brake.

Regulation 55. (Duties of Banksmen, bellmen and signalmen).—(1) Every banksman, bellman and signalman, as the case may be, shall observe the following provisions—

- (a) He shall have full control of the top of the shaft, winze or landing as the case may be; and shall report to the manager any person who without authority, gives a signal or disobeys instructions.
- (b) He shall thoroughly acquaint himself with, and carefully attend to, the prescribed code of signals, and shall properly transmit the signals by the means provided. He shall not act on any signal the correctness of which he is in doubt, except a signal which he believes to be 'to stop'. He shall not allow any unauthorised person to give signals.
- (c) He shall devote the whole of his time to his duties, and shall not leave his post during the period of his duty. Where the mine is worked by a succession of shifts, he shall not leave his post unless relieved by a duly appointed substitute.
- (d) He shall not allow more than the authorised number of persons to enter the cage or other means of conveyance at any one time.
- (e) He shall not, unless specially authorised in writing by the manager in that behalf, allow any person when riding in a cage or other means of conveyance, to take with him any bulky material other than tools and instruments or explosives other than those carried by a blaster.
- (f) After any stoppage of winding for repairs or for any other cause for a period exceeding two hours, he shall not allow any person to ride in a cage or other means of conveyance unless it has been run at least one complete trip up and down the working portion of the shaft.
- (g) He shall not allow any person to ride on the top or edge of any cage or other means of conveyance except when engaged in examination, repair or any other work in the shaft.
- (h) He shall, after persons have entered the cage, see that the cage gates on both sides are in position and closed, before signalling for the cage to be lowered or raised.
- (i) He shall not allow any unauthorised person to handle tubs in or out of the cage.
- (j) He shall not, at any entrance into a shaft, winze or landing which is provided with gates or fences not worked by the cage or other means of conveyance, begin to remove the gate or fence until the cage or other means of conveyance has stopped at the entrance, and shall close the gate before he has signalled the cage or other means of conveyance away; he shall not permit any other person to open or interfere with the gate.
- (k) He shall see that all fences and gates provided at the top of the shaft, winze or landing are in position.
- (l) He shall not permit any unauthorised person to remove a fence or gate; and if he notices any defect in such fence or gate, he shall immediately inform the manager.
- (m) He shall keep the top of the shaft or the inset and the floor of every cage free from loose material.

(n) He shall, when long timber, pipes, rails or other material projecting over the top of a cage or other means of conveyance are lowered or raised, see that the projecting ends are securely fastened to the rope, chains or bow.

(o) He shall when he suspects that the cages are not working smoothly in the shaft or winze or when he hears anything unusual happening in the shaft or winze while the winding engine is working, immediately give signal to the winding engineman to stop the engine.

(p) He shall immediately report to the manager any defect in the signalling installation.

(2) (a). At the beginning of his shift, the banksman shall see that the keys are in proper working order.

(b) The banksman when he is informed of any danger in the shaft or winze shall not allow any person to descend except for the purpose of examination or repairs; and during the time that such examination or repairs are going on, shall be on duty and listen for signals.

(c) The banksman shall not permit any person descending the shaft to carry any intoxicating drink or drug, or allow any intoxicated person to descend.

Regulation 56. (Duties of haulage attendants).—(1) Every haulage engineman, brakesman and signaller shall thoroughly acquaint himself with, and carefully attend to, the prescribed code of signals.

(2) The person in charge of any tub or set of tubs, which it is intended to send up any haulage plane or incline on which drags or back-stays are required to be used, shall securely fix the drag or back-stay or cause it to be so fixed before such tub or set of tubs is set in motion.

(3) The person in charge at the top of any haulage plane or incline shall see that the stop-blocks are blocking the way, before allowing any tub to be brought on to the top landing; and shall cause the tubs to be securely coupled up to each other and to the rope or chain before the stop-block is opened. In case any alternative safety appliance is provided, he shall cause the same to be brought into use on every such occasion.

(4) The person who is responsible for the attachment, to the haulage rope, of any tub or set of tubs at any stopping place on any haulage plane or incline, shall see that no person remains in a position of danger at or near such stopping place while the rope is in motion.

(5) The person in charge at the top or bottom of the incline shall see that no unauthorised person rides on any tub or haulage rope.

(6) Before a train of side tipping tubs is set in motion the person in charge shall see that the safety catches of all such tubs are properly secured.

Regulation 57. (Duties of locomotive drivers etc.).—(1) The locomotive driver shall, before commencing work in his shift, ensure that the whistle and the brakes of the locomotive are in working order.

(2) The locomotive driver shall sound the whistle when the locomotive is approaching a level crossing or any place where any person is at work or where the driver's sight is intercepted.

(3) When tubs or wagons are being pushed in front of the locomotive, the shunter shall accompany the leading wagon.

(4) The locomotive driver shall not leave a locomotive unattended away from the places where it is housed, unless he has ensured that it cannot be set in motion by any unauthorised person.

(5) The locomotive driver shall ensure that no unauthorised person drives, handles or rides on a locomotive.

(6) The locomotive driver shall not set the locomotive in motion until audible warning has been given by him to persons whose safety may be endangered.

(7) The locomotive driver shall not work the locomotive except during hours of daylight, unless the locomotive is fitted with sufficient headlights as prescribed.

Regulation 58. (Duties of magazine incharge).—The magazine incharge—

(a) shall be responsible for the proper receipt, storage and issue of explosives in and from the magazine;

- (b) shall maintain such records of explosives so received, stored and issued, as are required by the rules made under Indian Explosives Act, 1884, or under any Act amending or repealing the same, and under the Act and under the regulations, rules, bye-laws and orders made thereunder;
- (c) shall not issue explosives to any person other than a competent person; and when explosives are returned to the magazine, shall re-issue such explosives before issuing fresh stock;
- (d) shall record the name of various competent persons, and the quantity and nature of explosives issued to each of them; and shall similarly record the quantity and nature of explosives returned to the magazine by each person;
- (e) shall securely lock each canister before issuing it to the competent person and also check whether the canister is returned to the magazine in locked condition; he shall not issue explosives in any canister which is not in proper repair or which cannot be securely locked;
- (f) shall not allow any unauthorised person to enter the magazine; and
- (g) shall, if he discovers any shortage of explosives in the magazine, forthwith inform the manager in writing.

Regulation 59. (Duties of register keepers).—(1) Every person appointed to keep registers or other records required by or under the Act or under the regulations, rules and bye-laws made thereunder, or to make entries therein, shall make the necessary entries with reasonable despatch.

(2) During the whole time that persons are present belowground, the attendance clerk shall be on duty at the top of the shaft or incline.

(3) If after the commencement of a shift, any official or a competent person has not got his attendance recorded in the register maintained under Section 48(4) of the Act, the attendance clerk concerned shall, within two hours after the commencement of the shift, report the fact in writing to the manager or the underground manager or other official in charge of the shift.

CHAPTER VI

PLANS AND SECTIONS

Regulation 60. (General requirements about mine plans and sections).—(1) Every plan prepared or submitted in accordance with the provisions of the regulations shall—

- (a) show the name of the mine and of the owner and the purposes for which the plan is prepared;
- (b) show the true north or the magnetic meridian and the date thereof;
- (c) show a scale of the plan, at least 10 inches long and suitably subdivided;
- (d) unless otherwise provided, be on a scale of 100 feet to an inch: Provided that the Chief Inspector may, by an order in writing, permit or require the plans to be prepared on any other suitable scale; and
- (e) be properly inked in on durable paper or on tracing cloth, and be kept in good condition.

(2) The convention shown in Second Schedule shall be used in preparing all plans and sections required by the regulations.

(3) The plans and sections required by the regulations shall be accurate and maintained up-to-date within three months; Provided that where any mine or part is proposed to be abandoned or the working thereof to be discontinued or rendered inaccessible, the plan and section shall be brought up-to-date before such abandonment or at the time of discontinuance as the case may be, unless such abandonment or discontinuance has been caused by circumstances beyond the control of the owner, agent or manager, in which case the fact that the plan or section is not up-to-date shall be recorded on it.

(4) Plans and sections required to be maintained under the regulations shall be kept in the office at the mine, and shall not be removed therefrom, except by or at the instance of an Inspector, unless a true copy thereof has been kept therein.

Regulation 61. (Types of plans).—(1) The owner, agent or manager of every mine shall keep the following plans and sections:—

- (a) A surface plan showing every surface feature within the boundaries, such as telephone, telegraph or power transmission line, water-main, railway, road, river, water-course, reservoir, tank, borehole, shaft and incline opening, opencast working, subsidence and building on the surface.
- (b) An underground plan showing the position of the working of the mine below ground; every bore-hole, shaft, drive, crosscut, winze, rise, excavations (stoped ground); every tunnel and air passage connected therewith; every pillar or block of the mineral left for the support of any structure on the surface; underground magazines, if any; every fire-seal, water dam, underground pumping and ambulance station; and every important feature within the boundaries such as railway, road, river, stream, water-course, tank, reservoir, opencast working and building which is within 600 feet of any part of the workings measured on the horizontal plane; also the general strike of the veins, lodes, reefs and mineral beds or deposits, with their dips at different points and such sections of the strata sunk or driven through in the mine or proved by boring as may be available, the position of every dyke, fault and other geological disturbances with the amount and direction of throw and the depth of every shaft.
- (c) A transverse section or sections of the workings through the shaft or shafts and main adits indicating clearly the surface and the dip of the vein, lode, reef or mineral bed or deposit, drawn to the same scale as the plan.
- (d) A vertical mine section or sections showing a vertical projection of the mine working, where a reef, vein, lode or mineral bed or deposit has an average dip of more than 60 degrees from the horizontal.
- (e) A ventilation plan and section showing the system of ventilation in the mine, and in particular, the general direction of air-current, every point where the quantity of air is measured, every device for the regulation and distribution of air, every fire refuge chamber, if provided, every pumping, telephone and ambulance station, every underground magazine, every room used for storing inflammable material and every travelling road.
- (f) A geological plan of the area of leasehold, on a suitable scale.

(2) Where different reefs, lodes, veins or mineral beds or deposits overlie or run parallel to one another, the working of each reef, lode, vein or mineral bed or deposit shall be shown on a separate plan and section or sections.

(3) (a) The plans maintained under clauses (a) and (b) of sub-regulation (1) shall also show surface contour lines drawn at vertical intervals not exceeding 10 feet.

(b) In every mine, levels shall be taken at easily identifiable points sufficient in number to allow of the construction of sections along all drives, main headlines and haulage-ways.

(c) A permanent bench-mark shall be established on the surface, and all levels taken above and below ground shall be referred to the plane in relation to such bench-mark. Particulars of the bench-mark together with its height above Mean Sea Level shall be shown on the plans required to be maintained under these regulations.

(4) (a) (i) The plans kept under clauses (a) and (b) of sub-regulation (1) shall also show the settled boundary of the mine, or where the boundary is in dispute, the boundaries claimed by the owner of the mine and by the owners of the mines adjacent to the disputed boundary. Provided that where it is not possible to show the complete boundary of lease-hold on the same plan, an additional key plan on any other suitable scale showing such boundaries and the outline of the workings shall also be maintained.

(ii) The plans required to be kept under clause (b) of sub-regulation (1) shall also show the working both above or belowground of all adjacent mines as are situated within 200 feet of the boundary claimed by the owners of the mines.

(b) The owner, agent and manager of every mine shall give all reasonable facilities to the surveyors of its adjacent mines to carry out the surveyors and levellings required to be made under this sub-regulation.

(5) (a) The Regional Inspector may, by an order in writing, require such additional details to be shown on the plans and sections required to be kept under the regulations, or the preparation and maintenance of such other plans and sections showing such details and on such scale and within such time as he may specify.

(b) The Regional Inspector may, by an order in writing, require the owner, agent or manager to submit to him within such time such plans and sections; or tracings thereof, as he may specify.

(c) The owner, agent or manager shall at any time, if required by an Inspector, show on any plan or section the then position of the workings of the mine.

Regulation 62. (Copies of plans to be submitted).—The owner, agent or manager shall, on or before the 30th April of every year, submit to the Chief Inspector, two up-to-date copies of the plan and section maintained under clauses (b), (c) and (d) of Regulation 61(1). The provision of this regulation shall be deemed to have been complied with if the owner, agent or manager gets the copies of the plans and sections submitted hereunder during the previous year brought up-to-date at his own expense.

Regulation 63. (Plans to be submitted after abandonment or discontinuance).—(1) Where any mine or part thereof is abandoned or the working thereof has been discontinued over a period exceeding 60 days, the person who was the owner of the mine at the time of the abandonment or discontinuance shall, within 30 days after the abandonment or within 90 days after the discontinuance of the workings, as the case may be, submit to the Chief Inspector two true copies of the up-to-date plan and section of the workings of the mine or part maintained under clauses (b), (c) and (d) of Regulation 61(1). Every such copy shall show the bearing and distance of at least one of the shafts or openings of the mine from a trijunction or revenue pillar or from any other prominent and permanent surface feature, the position of all water-dams built belowground (with their dimensions and other particulars of construction) and also the spot-levels at the ends of the workings: Provided that if a change of ownership occurs after the abandonment or discontinuance and before the expiry of the 30 days or the 90 days aforesaid, as the case may be, such plans and sections shall be submitted forthwith.

(2) The original or a certified true copy of the plans and section submitted under sub-regulation (1) shall be kept in the office at the mine.

(3) The Chief Inspector may, at his discretion and on such conditions as he thinks fit to impose, supply copies of a plan or section sent to him under sub-regulation (1) or such parts thereof as he thinks fit—

(a) to any person having a *bona fide* interest in the mine or part; or

(b) to the owner, agent or manager of an adjacent mine.

Every application for a copy of a plan or section as aforesaid shall be accompanied by a fee of Rs. 50.

Regulation 64. (Survey Instruments and materials).—The owner or agent shall provide accurate and reliable survey instruments and materials for the proper carrying out of all survey and levelling work and for preparing the plans and sections required under these regulations; and no other instruments or implements shall be used in connection with any such survey or levelling work: Provided that the Chief Inspector may, by an order in writing, require that any particular survey shall be carried out with instruments such as he may specify and it shall be the duty of the owner or agent to provide the said instruments.

Regulation 65. (Lists of plans and instruments and their storage).—All plans and sections, and tracings or copies thereof, kept at a mine shall be serially numbered.

(2) Suitable arrangements shall be made at every mine for the proper storage and maintenance of every plan and section and of all instruments and materials. Such arrangements shall provide for flat storage of every plan and section maintained under clauses (b), (c) and (d) of Regulation 61(1).

(3) Every field book and other notes used in the preparation of plans and sections required under the regulations shall be duly indexed and kept in the office at the mine.

(4) A list of all plans and sections maintained under the regulations and rules and under any orders made thereunder and tracings or copies thereof and of all survey instruments provided under Regulation 64 and all field books and other notes kept under sub-regulation (3) shall be kept in a bound paged book and brought up-to-date whenever necessary. Every entry in the book shall be signed and dated by the surveyor and countersigned by the manager.

Regulation 66. (Responsibility of surveyors).—(1) Every plan and section, and tracing thereof, prepared under the regulations shall be prepared by or under the personal supervision of a person possessing a Surveyor's Certificate.

(2) Every plan or section, or any part thereof, prepared under the regulations shall be prepared by or under the personal supervision of a surveyor, shall carry thereon a certificate by him to the effect that the plan or section or part thereof is correct; and shall be signed and dated by the surveyor and countersigned by the manager on every occasion that the plan or section is brought up-to-date.

(3) Every tracing of a plan or section or of any part thereof shall bear a reference as to the original plan or section from which it was copied and shall be certified thereon by the surveyor to be a true copy of the original plan or section. The certificate shall be signed and dated by him.

(4) If the surveyor conceals any part of the workings or allows the plans or sections to be inaccurate, he shall be deemed to be guilty of a breach of these regulations. Nothing in this regulation shall, however, exempt the owner of his responsibility to ensure that every plan or section prepared, kept or submitted under the regulations is correct and maintained up-to-date as required thereunder.

Regulation 67. (Plans to be checked on change of ownership or re-opening).—

(1) When there is a change in the ownership of a mine or where a mine or part thereof is reopened or where in any mine or part thereof it is intended to start stopping operations or the extraction or reduction of pillars or blocks of minerals, the owner shall assure himself that the plans and sections of the mine or part are accurate. If any doubt arises as to the accuracy of the plans and sections in any respect, he shall have accurate plans and sections prepared afresh before any drivage or other work of development or stopping operations or of extraction or reduction of pillars or blocks of minerals is commenced.

(2) If the Regional Inspector is of the opinion that any plan or section prepared, kept or submitted under the regulations is inaccurate he may, by an order in writing, require a fresh survey made and a new plan or section prepared, within such time as he may specify.

(3) If the plan or section required to be prepared under sub-regulation (2) is not prepared within the time specified in the order or to the satisfaction of the Regional Inspector, or the plans or sections are not prepared or brought up-to-date as required under these regulations, he may have the plan or section prepared by any other agency; and the cost thereof, as certified by the Chief Inspector, shall be defrayed by the owner of the mine and recoverable from him as a debt to the Government.

CHAPTER VII

MEANS OF ACCESS AND EGRESS

Regulation 68. (Outlets from a mine).—(1) No person shall be employed, or be permitted to enter or remain for purpose of employment, in any system of workings belowground, unless the system is provided with at least two shafts or other outlets—

- (a) with which every lode, reef, vein or mineral bed or deposit or section for the time being at work has a communication so as to afford separate means of ingress and egress to the persons employed therein;
- (b) which do not have their surface openings in the same building; and
- (c) which are under the sole control of the manager;

Provided that where two systems of workings belowground are interconnected, both of which are not under the control of the same manager, the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, permit either of such systems to be worked with a single shaft, incline or outlet.

(2) Suitable arrangements shall be made for persons to descend and ascend by each of such shafts or outlets. Where the shaft is more than 100 feet in depth or where the incline is not walkable, such arrangements shall be by mechanical

means Every mechanical equipment used for the purpose shall be so installed and maintained as to be constantly available for use In case of a dispute as to whether any such arrangement is suitable or not, it shall be referred to the Chief Inspector whose decision thereon shall be final

(3) Such shafts or outlets shall not be less than 45 feet distant from one another at any point, and each shall be connected with the other by means of a walkable passage not less than 6 feet high and 5 feet wide Provided that outlets made before the coming into force of these regulations may be closer than 45 feet but not less than 25 feet apart

(4) Whenever the connection between two outlets which are required to be maintained under sub-regulation (1) has been obstructed or found dangerous, only such persons as are necessary to clear the obstruction or to repair the dangerous part of the connection or to make a new second outlet, shall be employed belowground until such time as the connection has been re-established or a new second outlet has been provided

(5) The foregoing provisions of this regulation with respect to shafts and outlets shall not apply—

- (a) to a shaft which is being sunk or to an outlet which is being made,
- (b) to any working for the purpose of making connection between two or more shafts or outlets, and
- (c) to any working for the sole purpose of searching for or proving minerals,

so long as not more than 20 persons are employed belowground at any one time in the whole of the workings belowground in connection with a single shaft or outlet Provided that if the single outlet is a shaft other than a shaft in the course of sinking and exceeds 100 feet in depth, it shall be provided both with ladders and with other means of raising and lowering persons Provided further that nothing in this sub-regulation shall be deemed to authorise the driving of roads for development purposes before a second outlet has been made in accordance with the said provisions

(6) The Chief Inspector may, by an order in writing and subject to such conditions as he may specify, exempt from the operation of this regulation any mine in the case of which special difficulties exist which in his opinion make compliance with the provisions thereof not reasonably practicable

Regulation 69 (Shafts and winzes)—(1) Every shaft or winze in use or in course of being sunk and every other outlet shall be made and kept secure

(2) Every shaft or winze in the course of being sunk shall be provided with a permanent lining, either of timber, brick, concrete or masonry, which shall at no time be more than 20 feet from the bottom of the shaft or winze Provided that where iron or steel rings with a substantial lagging are used below the permanent lagging and are kept close to the bottom of the shaft, this distance may be increased to not more than 60 feet

Provided further that in case of a shaft or winze where special conditions exist which make compliance with the provisions of this sub regulation not necessary, the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, grant exemption from the operation thereof

(3) Every shaft or winze regularly used for lowering and raising persons or materials, which is wet, shall be provided with water garlands or other means of collecting and conducting away seepage water

(4) The top and all landings between the top and bottom of every working shaft and winze and the sump thereof shall be kept clear and free from loose materials, tools and debris

Regulation 70 (Fencings and gates at outlets)—(1) Every entrance to a mine from the surface, and the top and all entrances between the top and bottom including the sump if any, of every working, ventilating or pumping shaft or winze shall be kept securely fenced

(2) Every entrance from the surface to the workings belowground which can be entered on foot, shall be provided with a substantial gate which shall be kept closed and locked when there are no persons belowground Provided that where

such entrance is not used as a means of ingress or egress in or out of the mine, it shall be permanently closed so as to effectively prevent persons from entering therein.

Regulation 71. (Outlets from mine parts).—Every part of a mine shall, where practicable, be provided with at least two ways affording means of egress to the surface. In case of a dispute as to whether the provision of two such ways is practicable or not, it shall be referred to the Chief Inspector whose decision thereon shall be final.

Regulation 72. (Periodic examination etc. of outlets).—(1) Every shaft and other outlet provided as required by Regulation 68 shall be examined, once at least in every seven days, by the foreman or other competent person. A report of every such examination shall immediately thereafter be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person making the examination.

(2) If at the time of such examination or at any other time, the shaft and other outlet is found to be not safe, it shall not be used for any purpose whatsoever, until it has been made safe in all respects. Report of every such action taken shall be recorded in the book kept under sub-regulation (1).

CHAPTER VIII

LADDERS AND LADDERWAYS

Regulation 73. (Provision of ladders etc.).—(1) Every shaft or winze, including a shaft or winze in the course of sinking, which has an inclination exceeding 25 degrees from the horizontal, shall be provided with a ladderway from the top to the bottom: Provided that in the case of a shaft or winze in the course of sinking, the ladderway may be provided to within such distance from the bottom as to secure it from danger during blasting operations, and a chain or rope ladder shall be provided from this point to the bottom of the shaft or winze:

Provided further that where the Chief Inspector is of the opinion that compliance with the provisions of this sub-regulation is not reasonably practicable, he may, by an order in writing and subject to such conditions as he may specify, grant exemption therefrom.

(2) Every working place shall be provided with platforms or other means of keeping a foothold, and where necessary, with ladders for climbing.

Regulation 74. (Ladders).—(1) Every ladder used in a mine shall—

- (a) be of strong construction;
- (b) be securely fixed in the shaft, winze or stope so as not to be in an overhanging position;
- (c) be made continuous or without perceptible overlapping or break except at a platform or sollar;
- (d) project at least three feet above the mouth of the shaft, winze, rise or stope and above every platform, except where strong holdfasts or hand-rails are provided;
- (e) have rungs equally spaced and at a sufficient distance from the wall or any timber to ensure proper foothold; and
- (f) be maintained in good repair.

(2) Except in respect of the lowest 30 feet of a sinking shaft or winze, no ladder shall be placed at an inclination of more than 80 degrees from the horizontal: Provided that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, permit a ladder to be fixed at a steeper inclination.

Regulation 75. (Provision of sollars).—(1) In ladderways exceeding 60 feet in depth and having an inclination of more than 65 degrees with the horizontal, platforms or sollars shall be provided at intervals of not more than 30 feet along the underlie or slope of the shaft or winze. Where the inclination is more than 30 degrees from the horizontal, the platforms or sollars shall be provided at intervals of not more than 55 feet.

(2) If a manhole is provided in any platform in any shaft or winze, it shall be placed behind the ladder leading up from the platform.

(3) Every opening in a platform provided for the handling of timber or other materials shall be effectively closed off from the rest of the platform.

Regulation 76. (Guarding of ladderways).—(1) Every ladderway in a shaft or winze used for winding or other purposes shall be in a separate compartment or shall be adequately guarded from the other compartments.

(2) Every ladderway below any place or travelling road where persons are stationed or pass, shall be provided with a suitable cover or substantial fence or guard.

Regulation 77. (Carrying of materials on ladderways).—No person shall carry or be permitted to carry a drill, tool, explosives or any loose material on a ladderway in a shaft or winze having an inclination of more than 45 degrees from the horizontal except so far as may be necessary for carrying out repairs: Provided that nothing in this sub-regulation shall prevent a person from carrying a drill, tool or explosives in a suitable sling or container secured to his person.

CHAPTER IX

TRANSPORTATION OF MEN AND MATERIALS—WINDING IN SHAFTS

Regulation 78. (Appointment etc. of winding engineman).—(1) No person shall be appointed as a winding engineman unless he holds—

(a) in the case of an electric winding engine of 75 h.p. or more or of a steam or compressed air winding engine which has cylinders exceeding 12 inches in diameter, a I Class Engine Driver's Certificate, and

(b) in any other case, a II Class Engine Driver's Certificate: Provided that this Clause shall not apply to the driver of a steam or compressed air winding engine which has cylinders not exceeding seven inches in diameter and which is not used for raising or lowering persons.

(2) Where special difficulties exist which make compliance with the provisions of sub-regulation (1) not reasonably practicable, the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, relax the said provisions.

(3) No person, other than a winding engineman appointed under sub-regulation (1) shall operate any winding engine.

(4) The name of the winding engineman on duty, together with the period of his shift, shall be posted in the winding engine room. Where the Regional Inspector is of the opinion that the duties of any winding engineman are unduly arduous, he may by an order in writing, require the period of his shift to be reduced to such period, not less than five hours, as he may specify.

Regulation 79. (New winding engines).—(1) When it is intended to bring into use any new winding installation for lowering and raising persons, the owner, agent or manager shall, not less than 60 days before such use, give notice of such intention to the Regional Inspector. The notice shall contain detailed specifications of the installation.

(2) If the Regional Inspector by an order in writing so requires, such additions or alterations shall be made to the installation, as he may specify in the order.

Regulation 80. (Construction and installation of winding equipment).—(1) Every part of a winding installation, including headgear etc., shall be of sound construction and adequate strength, and shall be maintained in safe working order. In case of any dispute as to the foregoing, it shall be referred to the Chief Inspector whose decision thereon shall be final.

(2) The engine shall be firmly connected to a rigid foundation and shall be so designed, constructed and maintained that with the power provided, the raising and lowering of persons or materials can be carried out with ease, regularity and safety.

(3) Unless otherwise permitted in writing by the Chief Inspector and subject to such conditions as he may specify, every engine for winding shall be so situated in relation to the headgear that the winding rope shall not, in its extreme position, subtend in either direction an angle of more than one and a half degrees with the plane of the sheave or pulley used with the rope.

(4) (a) The diameter of the drums or sheaves of the winding engine, and of the pulleys and sheaves used in connection with the winding shall, unless otherwise permitted in writing by the Chief Inspector and subject to such conditions as he may specify, be not less than 100 times the diameter of the winding rope. The grooves of such sheaves or pulleys shall be suited to the diameter of such rope.

(b) Every pulley or sheave used in connection with winding shall, while in motion, rotate in a true vertical plane, and shall be maintained in such a condition that slipping is reduced to a minimum.

Regulation 81. (Spare rope to be stored).—At every mine where a shaft or winze is used for lowering or raising persons, at least one spare winding rope, suitable for use in such shafts or winzes shall be kept in reserve.

Regulation 82. (Fittings of winding engines).—At every shaft or winze where winding is effected by means of an engine, the following provisions regarding winding engines shall have effect, namely:—

(1) There shall be on the drum such flanges, and also if the drum is conical or spiral, such other appliances, as will be sufficient to prevent the rope from slipping or coiling unevenly. Except in "Koepe" system of winding, the end of the rope shall be securely fixed in such a manner that the rope is not unduly strained. There shall be at least two turns of the rope on the drum when the cage or other means of conveyance is at its lowest point in the shaft or winze.

(2) (a) There shall be provided one or more brakes on the drum-shaft which—

(i) if there are two cages or other means of conveyance, will hold such cages or other means of conveyance when the maximum torque is applied in either direction; or

(ii) if there is only one cage or other means of conveyance, will hold the loaded cage or other means of conveyance in midshaft when the maximum torque is applied downwards.

(b) At least one of the brakes shall be so designed that the brake remains at the 'on' position except when operated.

(c) The brake or brakes shall be so arranged that if the power supply fails, they shall automatically come into operation by mechanical means or preferably by gravity, and shall in no case be operated by an auxiliary electric current.

(d) The brake on the drum shall be used only for the purpose of keeping such drum stationary and not for lowering the cage or other means of conveyance.

(3) Where the winding engine is worked by steam or compressed air, a screw stop-valve shall not be used as the controlling valve of the engine.

(4) Every engine shall be equipped with a reliable depth-indicator (in addition to any mark on the rope) showing to the winding engineman the position of the cage or other means of conveyance in the shaft or winze and an automatic device that will ring a bell in the engine room when the ascending cage or other means of conveyance is at a distance of two revolutions of the drum from the top of the shaft or winze. The depth-indicator shall be tested after every adjustment or replacement of the winding rope.

Regulation 83. (Shaft fittings).—At every winding shaft or winze, other than a shaft or winze in the course of sinking—to which the provisions of Regulation 87 shall apply—the following provisions shall have effect, namely:—

(1) (a) Efficient means shall be provided and maintained for inter-changing distinct and definite signals between the bottom of the shaft or winze and from every landing for the time being in use between the bottom and the top of the shaft or winze. There shall also be efficient means of transmitting distinct and definite signals from the top of the shaft or winze to the winding engineman. All signals shall be transmitted by mechanical or electrical means.

(b) In signalling, the following code of signals shall be used and strictly observed—

ONE RAP—STOP when engine in motion.

ONE RAP—RAISE when engine at rest.

TWO RAPS—LOWER.

THREE RAPS—MEN ready to ascend or descend.

THREE RAPS—IN REPLY—men may enter the cage or other means of conveyance.

Any other signals shall be in addition to, and shall not interfere with the foregoing: Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit the use of any other specified code of signalling.

(c) A printed copy of the code of signals, including additional signals, if any, shall be posted prominently at the top of the shaft or winze and at every such landing and also in the winding engine room.

(d) No person other than the banksman, bellman or signallman shall give any signal unless he is an official of the mine or is authorised in writing by the manager to give signals.

(2) (a) Where the shaft or winze is vertical and exceeds 150 feet in depth, it shall be provided with sufficient number of guides to ensure smooth and safe travel of the cage or other means of conveyance.

(b) Where rope guides are used, the check-weights or the bottom clamps shall be kept so exposed as to permit regular examination.

(3) Above the topmost landing in every vertical shaft or winze, 'dogs' or other devices for holding the cage or other means of conveyance in the event of an overwind shall be provided, or the guides, runners or receivers shall be sprung.

(4) (a) At the top of every shaft or winze where cages are used, suitable keps shall be provided and so arranged as to fall into the 'on' position when the operating level is released.

(b) At every inset where keps are provided, arrangements shall be made to lock the keps securely in the 'off' position; and when in the 'off' position, such keps shall leave the shaft or winze clear for the passage of the cage.

(5) Where the shaft or winze is vertical, protective roofing or pent-house sufficient to prevent danger from anything falling in the shaft or winze, shall be provided and maintained at the bottom of the shaft or winze and at all landings where persons ascend or descend. The gap, both vertical and horizontal, between the protective roofing or pent-house and the top of cage, when the cage is at the bottom of the shaft or winze, shall not exceed six inches.

Regulation 84. (Manwinding).—At every shaft or winze, other than a shaft or winze in course of sinking, where a winding engine is used for the purpose of lowering or raising persons, the following provisions shall have effect, namely—

(1) In respect of every part of the winding installation, including pulleys or sheaves, cages, chains, distribution plates and detaching hooks, the following particulars shall be recorded in a bound paged book kept for the purpose—

(a) Name of the manufacturer and the year of manufacture;

(b) Specifications and dimensions;

(c) Reference to every certificate supplied with the parts; and

(d) Any other detail that may be necessary or required by an Inspector.

All entries in the book shall be made and signed by the engineer or other competent person, and shall be countersigned and dated by the manager.

(2) In any winding installation, whenever any part or article is replaced or any repaired part or article is used, the fact of such replacement or repair shall be recorded in the book kept under sub-regulation (1) and also notified to the Regional Inspector.

(3) (a) A single-linked chain shall not be used, except for the short coupling chain attached to a cage or other means of conveyance. Such single-linked chain shall be attached to the safety hook through a distribution plate or other approved appliance.

(b) Where safety-chains are used, their length shall be such that if the king-bolt breaks, the shock to the cage or other means of conveyance is as slight as possible.

(4) No open-hook shall be used for attaching the rope to a cage or other means of conveyance.

(5) Where drum-clutches are provided, the following provisions shall have effect, namely—

(a) The operating gear of the clutch of the drum shall be provided with locking gear to prevent inadvertent withdrawal of the clutch.

(b) Every engine used for the lowering or raising of persons shall have a suitable interlocking device so fitted that it is not possible—

(i) to unclutch any drum unless the brakes of such drum are 'on'; or

(ii) to release the brakes until the drum clutch is fully engaged and securely locked; and

(c) Unless the cage or other means of conveyance attached to the drum is resting at the bottom of the shaft or winze, the drum shall not be unclutched unless the winding engineman has assured himself immediately before-hand that the brake is in full 'on' position.

(6) If the shaft or winze is vertical, except in system of the 'Koepe' winding, there shall be provided between the rope and the cage or other means of conveyance a detaching-hook. The space between such detaching-hook, measured from the centre of the hole for attaching it to the rope shackle and the detaching-bell or plate when the cage or other means of conveyance is at its normal position at the top of the shaft or winze, shall not be less than 12 feet where a geared engine is used, and not less than 25 feet where a direct-acting engine is used.

(7) If the shaft or winze exceeds 1,000 feet in depth, there shall be a clear over-run space of not less than 25 feet below the lowest landing place. The sump below the lowest landing place shall be kept free from water or other liquid matter to an extent that in case of an overwinding, the persons riding in the cage or other means of conveyance will not be submerged.

(8) In the case of every shaft or winze exceeding 300 feet in depth, the engine shall be fitted with an automatically-recording speed-indicator.

(9) (a) In the case of every shaft or winze exceeding 300 feet in depth, there shall be provided an effective automatic contrivance to prevent over-speeding and overwinding hereinafter called the "Automatic Contrivance". The Automatic Contrivance shall prevent the descending cage or other means of conveyance from being landed at the bottom of the shaft or winze or other permanent landing at a speed exceeding five feet per second, and shall also control the movement of the ascending cage or other means of conveyance in such a manner as to prevent danger to persons riding therein. The Regional Inspector may, by an order in writing, specify the maximum speed of winding in any shaft: Provided that in case of any shaft or winze the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, grant exemption from the provisions of this sub-regulation.

(b) Tests of every Automatic Contrivance and every brake shall be made by the engineer or a competent person appointed for the purpose, in the following manner—

(i) once at least in every seven days, by raising each cage or other means of conveyance, in turn, to pass the last control point above the top-most landing; and

(ii) once at least in every three months, by attempting to land the descending cage at excessive speed. For the purpose of this test, the setting of the Automatic Contrivance may be altered so that a pre-determined point in the shaft or winze is regarded as the landing.

The results of every such test shall be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person making the test.

(c) Unless the Automatic Contrivance is in full and fixed engagement with the winding engine, it shall be fully engaged, either automatically or by the winding engineman whenever persons are to be lowered or raised; and a proper automatic indicator to show that this has been done shall be provided in such a position as to be easily seen by the banksman. No person shall be allowed to enter any cage or other means of conveyance until the indicator shows that the Automatic Contrivance has been fully engaged.

(10) Except where an Automatic Contrivance is provided to prevent overwinding, a point shall be fixed and marked on the indicator of the engine in such a way as to show when the cage or other means of conveyance is at a distance of twice the circumference of the drum from the completion of the wind; and if such cage or other means of conveyance contains persons, the winding engineman shall, as soon as it has reached the point aforesaid, not raise it for the remaining distance at a speed exceeding four feet per second.

(11) Where the only means of egress in a mine is by apparatus worked by steam or electricity, precautions shall be taken to ensure that the two winding engines do not fail simultaneously, and in particular in the case of electric winding engines, the engines shall be capable of being connected to two separate power supplies. Unless the Chief Inspector by an order in writing otherwise directs, the provisions of this sub-regulation shall be deemed to be satisfied if an emergency winding gear is maintained.

(12) (a) Every cage or other means of conveyance in which persons ride in a vertical or steeply inclined shaft or winze shall be—

- (i) covered completely at the top;
- (ii) closed in at the two sides in a manner sufficient to prevent persons or things from projecting beyond the sides;
- (iii) provided with a rigid hand-bar fixed in a position where it can be easily reached by all persons in the cage or conveyance; and
- (iv) provided with suitable gates or other rigid fences such that the gap between the floor of the cage and the lowest part of the gate or fence, or between any two adjacent members of the gate or fence does not exceed six inches. Gates or fences shall not open outwards; and they shall be so fitted and maintained that they cannot be accidentally opened:

Provided that so much of this sub-regulation as requires a covering at the top shall not apply in a shaft or winze which is less than 100 feet in depth.

(b) The floor of every cage or other means of conveyance shall be strongly constructed and so maintained as to prevent any part of the body of a person riding in the cage or other means of conveyance from projecting beyond the floor.

(13) (a) Not more than such number of persons as may be authorised by the manager shall be allowed to ride in the same cage or same deck of a cage or other means of conveyance at one time, and a notice specifying such number shall be posted at the top of every shaft or winze and at every inset. The number of persons fixed as aforesaid shall be such as to allow approximately three square feet of floor area per person.

(b) The total load when the authorised number of persons ride at any one time in any cage or other means of conveyance shall not exceed 60 per cent. of the maximum load when materials are wound.

(c) No person shall, when ascending or descending a shaft or winze, take with him any bulky material other than tools and instruments except when engaged in repairing the shaft or winze or with the written authority of the manager.

Regulation 85. (Multi-decks).—Where a cage has two or more decks which are used simultaneously, each floor at a landing shall be connected by an effective signalling device with the main floor of the landing; and only the banksman or the bellman, as the case may be, at such main floor shall give the action signal, and only after he has satisfied himself that all cage gates are closed.

Regulation 86. (Winding of material).—(1) Every cage used for the raising or lowering of tubs shall be provided with catches or other effective contrivances to prevent the tubs falling out. The cage shall not be set in motion unless the catches or other effective contrivances are in position.

(2) (a) The floor of every cage shall be kept clean; and no skip, bucket or tub shall be filled up to such a height that any of the contents can fall out.

(b) Before long timber, pipes, rails, or other material projecting over the top of the cage or other means of conveyance are lowered or raised, the projecting ends shall be securely fastened to the rope, chains or bow.

Regulation 87. (Winning in sinking shafts).—At every shaft or winze in course of being sunk, where a winding engine is used, the following provisions shall have effect, namely—

(1) If the shaft or winze is vertical and exceeds 150 feet in depth, there shall be provided for each bucket or other means of conveyance a detaching hook. Between the centre of the hole for attaching the detaching-hook to the rope shackle, and the detaching-bell or plate, when the bucket or other means of conveyance is at the top land, there shall be a clear over-run space of not less than 12 feet. Where the shaft or winze exceeds 500 feet in depth, the bucket when used for lowering or raising persons, shall be provided with sufficient cover overhead for protection from things falling down the shaft.

(2) If the shaft or winze is vertical and exceeds 500 feet in depth, it shall be provided with sufficient number of guides. Such guides shall be kept extended to within 75 feet of the shaft bottom at all time when sinking is in progress: Provided that the Regional Inspector may, by an order in writing, require the provision of guides in a shaft or winze which is less than 500 feet in depth or is not vertical

(3) (a) There shall be provided two separate means of transmitting distinct and definite signals from the bottom of the shaft or winze to the top, and from the top of such shaft or winze to the winding enginemen. The signalling appliance shall be examined by a competent person once at least in every 24 hours. The result of every such examination shall be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person making the examination.

(b) In signalling the following code of signals shall be used and strictly observed—

ONE RAP	STOP when engine in motion.
ONE RAP	...	TAKE UP SLACK when engine at rest.
ONE RAP	RAISE SLOWLY.
TWO RAPS		LOWER.
THREE RAPS	..	TAKE UP SLACK when men are riding.

Any other signals shall be in addition to, and shall not interfere with, the foregoing: Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit the use of any other specified code of signalling.

(c) A printed copy of the code of signals, including additional signals, if any shall be posted prominently at the top of the shaft or winze and also in the winding engine room.

(d) Except while riding in a bucket or other means of conveyance, no person other than the chargeman or a person authorised in writing by the manager, shall give any signal.

(4) Every bucket or other means of conveyance in which persons or materials are conveyed, shall be of strong construction and so maintained as to prevent persons or materials from falling.

(5) (a) At the top of the shaft or at the landing where the bucket or other means of conveyance is normally landed, suitable doors or covering shall be provided. Except as may be required for the passage of the bucket or other means of conveyance, the doors or covering shall always be kept closed.

(b) In addition, where the shaft or winze has an inclination of 35 degrees or more from the horizontal and the depth exceeds 150 feet measured on an incline or vertical plane, as the case may be, persons engaged at the bottom shall be protected by a suitable cover or scaffold extending over the whole area of the shaft or winze, sufficient space only being left therein for the passage of the bucket or other means of conveyance; and the cover or scaffold shall be situated—

(i) if the shaft or winze is vertical, not more than 75 feet from the bottom; and

(ii) in any other case, not more than 100 feet from the bottom;

Provided that in case of any shaft or winze where special circumstances exist, the Chief Inspector may by an order in writing and subject to such conditions as he may specify, grant an exemption from the provisions of this clause.

(6) Not more than such number of persons as may be authorised by the manager shall be allowed to ride in the bucket or other means of conveyance at one time; and a notice specifying such number shall be posted prominently at the top of the shaft or winze.

(7) When tools, implements or other materials are lowered or raised, the banksman or chargemen, as the case may be, shall see that—

(a) the bucket is properly loaded;

(b) materials are not loaded above the rim;

- (c) long timber, pipes, rails, tools or other materials with ends projecting over the rim are securely fastened to the rope, chains or bow; and
 - (d) the bucket, before being sent away, is steadied, and the bottom and sides thereof are free from adhering material.
- (8) Where guides are provided, the bucket or other means of conveyance shall be raised slowly from the bottom of the shaft or winze, until the rider is picked up.
- (9) While persons are at work on any scaffold or platform in the shaft or winze, the following precautions shall be strictly observed—
- (a) The scaffold or platform shall be secured to the sides of the shaft or winze in order to prevent it from swinging.
 - (b) The opening for the passage of the bucket or other means of conveyance shall be so protected as to prevent anything falling through it.
 - (c) The scaffold or platform shall not be lowered or raised except under the order of the chargemen or other competent person.

Regulation 88. (Winding ropes etc.).—At every shaft or winze, where a rope is used for winding purposes, the following provisions shall have effect, namely—

- (1) (a) No rope, bar, link, chain or other attachment to a cage or other means of conveyance shall be used unless it is of good quality and manufacture, is free from any patent defect and is of adequate calculated strength; Provided that the Chief Inspector may, by an order in writing, prohibit the use of any rope or type of rope where in his opinion, such use is unsafe.
- (b) The attachment between the rope and the cage or other means of conveyance shall be of a type and so maintained as to obviate accidental disconnection.
- (c) In case of a dispute as to the fitness of any rope, bar, link, chain or other attachment used or intended for use, it shall be referred to the Chief Inspector whose decision thereon shall be final.
- (2) (a) Except in a sinking shaft or winze less than 100 feet in depth, every winding rope shall be made of cold drawn steel wire, and the gauge of the wires used in the construction of such rope shall be suited to the diameter of the drums, pulleys and sheaves of the winding installation.
- (b) In any shaft or winze, including a shaft or winze in course of sinking, where persons are lowered or raised and where guides are not provided, no rope other than a rope of non-spinning type shall be used.
- (c) No rope which has been spliced shall be used for winding purposes.
- (d) Unless an exemption in writing has been granted by the Chief Inspector and subject to such conditions as he may specify, no rope the breaking load of which at any one point therein is less than 10 times the maximum static load on it when the cage or other means of conveyance attached to the end of the rope is at the lowest working point, shall be used or continued in use.
- (3) (a) For every rope in use or intended for use, a certificate showing its breaking load, quality, construction and diameter obtained from the manufacturer or supplier and a history of its use, including a record of diameters of the drums, sheaves and pulleys used in conjunction with the rope, shall be kept in a bound paged book kept for the purpose. All entries therein shall be made and signed by the engineer or other competent person, and shall be countersigned and dated by the manager.
- (b) If in case of a new rope a test certificate as to the amount of its breaking load is not available, it shall not be used unless a portion thereof, not less than 10 feet in length, has been cut off and tested in a laboratory, institution or test house approved by the Central Government for the purpose.
- (4) No winding rope which has been in use for more than three and half years shall be used for winding purposes: Provided that where the Regional Inspector is satisfied that, due to sparing use, any such rope is in good condition even after the expiry of the said period, he may, by an order in writing and subject to such conditions as he may specify, allow the use of such rope for a longer

period. Every application for permission to use a rope after the period of three and a half years aforesaid shall be accompanied by a copy of the entries, in respect of the rope, in the book kept for the purpose under sub-regulation (3), and also by a certificate as to the strength of the rope obtained in the manner laid down in clause (b) of that sub-regulation. The certificate aforesaid shall relate to a piece of the rope cut off not more than three months prior to the date of the application:

Provided further that where the Regional Inspector is of the opinion that any rope has become unsafe for use in a shaft, at any time of the period of three and a half years, aforesaid, he may, by an order in writing, prohibit the use of such rope for winding purposes. An appeal against any such order may be preferred to the Chief Inspector whose decision thereon shall be final.

(5) (a) No mode or type of capping shall be used, which fails to withstand a load of at least 10 times the maximum static load thereon.

(b) The cappel of a round rope shall not be attached to the rope by rivets passing through the rope.

(c) In those forms of capping, in which the wires at the end of the rope are bent back on the rope itself to form a cone, wedges formed by the lapping of soft iron wire shall be placed between the rope and that portion which is bent back. The length of the tapered portion of the socket shall be not less than 12 times the diameter of the rope.

(d) Where white metal is used in the capping of ropes, the tapered portion of the socket shall not be less than eight times the diameter of the rope.

(e) If white metal is used in the capping of ropes—

(i) its melting point shall not exceed 570° Fhr., and its temperature when poured into the socket shall not exceed 685° Fhr.;

(ii) in the length of rope which is to lie within the tapered part of the socket, the fibre core, if any, shall be untwisted and thoroughly cleaned; and

(iii) the socket shall be heated to a temperature of 212° Fhr. before the white metal is poured into it.

(6) Except in the 'Koepe' system of winding, every rope shall be recapped once at least in every six months, or if necessary, at shorter intervals and also after every overwind. Before every such recapping, a length, including the capping, of at least six feet shall be cut off the rope. Each piece of rope so cut off shall be opened and its internal condition examined. The operation shall be carried out under the supervision of the engineer or other competent person, who shall record the date and other particulars therefore in a bound paged book kept for the purpose, and shall sign and date the same.

Regulation 89. (Suspension gear).—(1) All parts of suspension gear in regular use shall be renewed after a period of service of not more than seven years, and at shorter intervals if necessary.

(2) (a) All cage chains in general used and all other parts of a suspension gear between the rope and the cage or other means of conveyance, including the detaching-hook, shall be taken apart, cleaned and carefully examined as to wear and tear (where necessary by gauging) and for rust and cracks, once at least in every three months, or if necessary, at shorter intervals. The various parts shall be annealed or given other proper heat treatment before being refitted: Provided that in the case of chains or gear manufactured from a steel which is not liable to deterioration necessitating annealing or heat treatment, the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, grant exemption from the carrying out of this operation.

(b) Every detaching bell or plate used in connection with a safety-hook shall be examined, and the opening therein checked by calipers or gauges, once at least in every 30 days.

(c) The operations and examinations required under this sub-regulation shall be carried out by or under the supervision of the engineer or other competent person, who shall record the date and other particulars thereof in a bound paged book kept for the purpose, and shall sign and date the same.

Regulation 90. (Precautions after recapping etc.).—After every installation or recapping of a rope and after every renewal or refitting of any suspension gear, the engineer or other competent person shall, after the cages or other means of conveyance fully loaded with materials have made 10 trips up and down the

working portion of the shaft or winze, examine the cappel and other parts of the suspension gear to see that they are in proper working order. A report of every such examination shall be recorded in the book kept under Regulation 89(2) and shall be signed and dated by the person making the examination.

Regulation 91. (Examination of winding equipment).—It shall be the duty of the engineer or other competent person to examine—

(a) Once at least in every 24 hours—

(i) each winding rope, by passing the rope at a speed not exceeding three feet per second;

(ii) the attachment of the winding rope to the drum, the depth indicator, every part of the suspension gear in the shaft or winze, including cages or other means of conveyance, and every external part of the winding apparatus, upon the proper working of which the safety of persons depends; and

(iii) the brakes of the winding engine;

(b) Once at least in every seven days, the external parts of the winding engine, the guides and the signalling arrangements fitted in a shaft or winze,

(c) Once at least in every 30 days, each winding rope, by passing the rope at a speed not exceeding 20 inches per second. For the purpose of this examination, the rope shall be cleaned of any encrusted dirt and grease at all places particularly liable to deterioration and at other places, not more than 100 feet apart, throughout the length; and any reduction in the circumference of the rope and the superficial condition of the wires as to wear, corrosion and fracture at every such place shall be noted; and

(d) Once at least in every year, the winding engine as to the condition of its internal parts.

(2) A report of every such examination shall be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person who made the examination, and countersigned and dated by the engineer and the manager.

(3) If on any examination made as aforesaid, there is discovered any weakness or defect by which the safety of persons may be endangered, such weakness or defect shall be immediately reported in writing to the engineer or other competent person and to the manager; and until such weakness or defect is remedied, the winding installation shall not be used.

Regulation 92. (Safety near shaft and winzes).—(1) At the top of every shaft of winze and at every landing which is in use, there shall be provided suitable gates or fences which shall effectively close the openings into the shaft or winze at all times when a cage or other means of conveyance is not at the top or the landing. Every such gate at the top of a shaft or winze shall be self-operating.

(2) (a) At every landing where it is necessary for persons to pass from one side of the shaft to the other, an adequate passby shall be provided for enabling them to do so without entering or crossing a winding compartment. Every passby so provided shall be not less than 6 feet high and 4 feet wide, and shall be kept clear of all obstructions.

(b) No person shall enter or cross, or be permitted to enter or cross, the winding compartment of a shaft or winze except for the purpose of entering or leaving a cage or other means of conveyance or for undertaking an examination, repair or any other work therein; and no person shall be allowed to work in any such space unless the cages or other means of conveyance, if any, have been stopped and adequate precautions have been taken for the protection of such person.

Regulation 93. (Duties of persons riding or working in shafts).—(1) No person shall get on or off a cage or other means of conveyance after the same has been signalled to be set in motion, or leave it until it has reached the appointed stopping place; nor shall any person ride on the top or edge of any cage or other means of conveyance except when engaged in an examination, repair or any other work in the shaft or winze.

(2) Every person, when at or about the top or bottom of a shaft or winze or any landing, shall obey the lawful orders and directions of the banksman or bellman, as the case may be.

(3) (a) No person shall carry out any examination, repair or other work in any winding compartment while winding operations are being carried on; and no winding shall be carried on or permitted while persons are engaged in such examination, repairs or work, except where winding is necessary for the same.

(b) The person in immediate charge of any examination, repair or other work in any winding compartment shall warn the banksman and the winding engineman that such examination, repair or work is about to be undertaken.

(c) Every person while engaged in any examination, repair or other work in a shaft or winze shall be accompanied by at least one other person; and all such persons shall be provided with effective safety belts unless otherwise efficiently protected against the risk of falling.

(d) Every person engaged in carrying out an examination, repair or work in a shaft or winze shall be protected by a suitable covering from objects falling from above. Every such person shall be provided with a protective hat and shall wear the same when so engaged.

(e) No person shall, except in case of necessity, enter any winding compartment when winding is going on.

Regulation 94. (General precautions).—No unauthorised person shall enter, or be allowed in, a winding engine room.

(2) No adolescent shall descend or ascend a shaft in a cage or other means of conveyance unless accompanied by one or more adults.

CHAPTER X

TRANSPORTATION OF MEN AND MINERALS—HAULAGE

Regulation 95. (Haulage Roads).—The following provisions shall have effect with respect to every length of road in a mine where materials are transported in tubs by means of gravity or mechanical power, namely:

(1) Every such road shall—

(a) be of adequate dimensions, and as far as practicable, shall be straight and of regular gradient; and

(b) have tracks properly laid with rails of adequate section.

(2) Pulleys, sheaves and rollers that alter the direction of a rope shall be securely fixed.

(3) Where haulage is effected by one or more ropes, there shall be provided and maintained—

(a) at the top of every inclined plane, at least one stopblock or other effective contrivance to arrest tubs from running or moving out of control,

(b) at least one runaway switch or other effective contrivance below the first stopblock or other effective contrivance at a distance greater than the length of a set or train of tubs: provided that such distance shall not exceed the length of a set or train of tubs by more than 30 feet;

Provided further that where the Regional Inspector, by an order in writing, so requires, the stop-block and the switch or other effective contrivance aforesaid shall be so intercoupled that they do not remain simultaneously ineffective;

(c) an attachment, behind an ascending tub or set or train of tubs, of a back-stay, drag or other suitable contrivance for preventing the tub, set or train of tubs running back. Where an endless rope or chain is used, the provisions of the this clause shall be deemed to be satisfied if suitable automatic catches or other effective contrivances are provided at suitable intervals along the track to prevent the ascending tubs running back. Provided that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, grant exemption from the operation of this clause on grounds that compliance with the provisions thereof is not reasonably practicable;

(d) safety hooks, jazz-rails or other suitable contrivances to prevent run-away in the forward direction;

- (e) tub re-ralliers at intervals of not more than 500 feet; and
- (f) on every haulage road exceeding 100 feet in length, effective means of transmitting signals from every stopping place on the road to the place at which the machinery working the rope is operated. All signals shall be transmitted by mechanical or electrical means; Provided that the Regional Inspector may, by an order in writing require means of transmitting signals in the reverse direction also. In case of any dispute as to whether any means of transmitting signals is effective or not, it shall be referred to the Chief Inspector whose decision thereon shall be final.

(4) (a) (i) The following code of signals shall be used and strictly observed—

- ONE RAP—STOP when in motion.
- TWO RAPS—LOWER or haul in slowly.
- THREE RAPS—START when at rest.
- FOUR RAPS—RAISE or haul out slowly.

Any other signals shall be in addition to and shall not interfere with, the foregoing; Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit the use of any other specified code of signals.

(ii) A printed copy of the code of signals, including additional signals, if any, shall be posted prominently at the place in which the machinery that works the rope is operated and at all regular stopping places along the road.

(iii) No person, other than a competent person or an official, shall give any signal.

(b) At places where signals and safety contrivances are regularly operated, every person operating any such signals or safety contrivance shall be afforded adequate protection against tubs moving out of control.

(c) The engineman or brakeman shall not start the haulage engine until he has received a signal to do so. If the signal is indistinct, he shall not start the engine until it has been repeated and he clearly understands it.

(d) Where electrical signalling is used—

- (i) Adequate precautions shall be taken to prevent signal and telephone wires from touching cables and other electrical apparatus;
- (ii) Signal wires shall be supported on insulators, and shall not be energised at more than 25 volts; and
- (iii) Contact makers shall be so constructed as to prevent the accidental closing of the circuit.

(5) Where in any mine belowground, a system of haulage roads (and conveyors, if any) extend to a distance of more than 1,500 feet from the shaft or the entrance to the mine, efficient telephonic communication shall be provided and maintained between the end of every such system and the bottom and top of the shaft or the entrance to the mine: Provided that where travelling is unduly arduous, the Regional Inspector may, by an order in writing, require the provision and maintenance of telephonic communication in any other case also.

(6) (a) Where any person is allowed to work or pass while the haulage is in motion, manholes for refuge shall be provided at intervals of not more than 30 feet: Provided that where the gradient is less than 1 in. 6, such manholes may be provided at intervals of not more than 60 feet.

(b) Manholes shall be not less than 6 feet in height and 4 feet in depth, and not less than 2½ feet but not more than 3½ feet in width: Provided that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, permit the use as manholes of cross roads other than haulage roads, of dimensions larger than aforesaid.

(b) Every manhole shall be kept clean and clear of obstruction, and white-washed both inside and for a distance of not less than one foot around the aperture.

(d) As far as practicable, all manholes shall be provided on one side of the haulage road.

(e) In case where there are serious practicable difficulties in providing man-holes as specified in clauses (a) and (b), the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, permit man-holes to be at greater intervals or of other dimensions.

(f) Except where haulage is effected by means of an endless rope or chain, whenever the haulage rope is in motion, every person on the haulage road shall take shelter in a manhole.

(7) The manager or underground manager shall by an order in writing, in respect of every haulage road, fix the maximum number of tubs, according as whether they are loaded or not loaded, that may be coupled together to run as a set or train. A notice specifying the number of tubs so fixed shall be posted prominently at the top, and at all regular stopping places, of the haulage road.

(8) (a) As far as practicable, tubs shall not be coupled or uncoupled on a gradient.

(b) At all places where tubs are coupled or uncoupled, there shall be a clear space of not less than 3 feet—

(i) between the tubs and one side of the road; and

(ii) where there are two or more tracks, also between the adjacent tracks.

(9) (a) When any road or face is in direct line with a haulage track, and persons may be exposed to danger from runaway tubs, a strong buffer or other effective contrivance to prevent such danger shall be provided and maintained.

(b) A stopblock or other effective contrivance shall be provided near the entrance of every tramming road branching off the main haulage road, and on every track which slopes towards the shaft.

Regulation 96. (Travelling roads).—(1) Except when an exemption in writing has been granted by the Regional Inspector and subject to such conditions as he may specify, travelling roads or compartments, separate from haulage roads or compartments on which haulage is effected by mechanical means or gravity, shall be provided for persons to travel to and from their working places.

(2) Every such travelling road or compartment shall—

(a) be not less than six feet high throughout;

(b) where the inclination exceeds 30 degrees from the horizontal, be provided with suitable steps or ladders;

(c) where the inclination exceeds 45 degrees from the horizontal, be provided in addition to steps or ladders, with hand rails or ropes so as to ensure safe travel; and

(d) where the inclination exceeds 60 degrees from the horizontal, be provided, in addition to the steps or ladders and hand rails or ropes, with suitable platforms at intervals not exceeding 30 feet measured along the slope.

(3) Except for purposes of inspection, examination or repairs, every person other than an official or a haulage attendant shall travel by the travelling road or compartment.

(4) Where persons using a travelling road or compartment have to cross a conveyor or a haulage road worked by gravity or mechanical means, a suitable cross-over bridge or other suitable device approved in writing by the Regional Inspector shall be provided.

(5) No haulage shall be used for the general conveyance of persons except with the permission in writing of the Chief Inspector and subject to such conditions as he may specify.

Regulation 97. (Tubs and their movement).—(1) (a) On every tubs there shall be provided and maintained at each coupling end, a strong buffer projecting beyond the end and so arranged that when two such tubs are in tandem, the gap between the innermost ends shall not be less than eight inches.

(b) On every side-tipping tub in use, safety-catches shall be provided to prevent accidental tipping. No tub or set or train of tubs shall be set in motion unless all the safety-catches are properly secured.

(c) The attachment between a rope or locomotive and a tub or set or train of tubs, and the attachment between any two tubs in a set or train, shall be of a type approved by the Chief Inspector and so maintained as to obviate accidental disconnection.

(d) The state of every buffer and drawbar of every tub in use and of every safety-catch, coupling-chain and other attachment shall be examined, once at least in every seven days, by a competent person appointed for the purpose. A report of every such examination shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by the person who made the examination.

(2) (a) When tubs are about to be moved, persons likely to be endangered shall be warned.

(b) Two or more tubs shall not be moved by hand in close succession but shall be coupled and moved together. Two tubs shall be deemed to be in close succession when the distance between them at any time is less than 50 feet.

(c) No person shall cause or permit a tub to run uncontrolled except with the written permission of the manager: Provided that the Regional Inspector may by an order in writing, prohibit the uncontrolled movement of tubs at any place if he is of the opinion that such movement is likely to cause danger.

(d) No person while taking a tub down a gradient exceeding 1 in 20 shall go in front of the tub, and in every case where the conditions are such that a person cannot control the tub from behind, he shall not take the tub down unless sprags or other suitable contrivances are used to control it.

(e) Where required for use, a sufficient number of sprags of suitable material and dimensions shall be provided.

(f) Every tub while standing on a track having a gradient of more than 1 in 20, unless held effectively by brakes or securely coupled to a haulage rope or locomotive, shall be effectively blocked, chained or otherwise secured.

(g) As far as possible, coupling and uncoupling of tubs shall be done only when the tub or set of the tubs, and the rope of connected to the set, is not in motion.

(3) No person shall ride on any tub or haulage rope except with the written authority of the manager. A list of all persons so authorised shall be maintained.

Regulation 98. (Promotion at Loading Chutes).—Every chute where tubs are loaded shall be provided with suitable gates for holding back the column of material.

Regulation 99. (Haulage ropes).—(1) No rope shall be used for purpose of haulage of a strand thereof is missing over any length.

(2) Every rope which is capped shall be recapped once at least in every six months, and if necessary, at shorter intervals, under the supervision of a competent person.

(3) For every haulage rope in use, a record of size, construction, quality, name of supplier and dates of installation and of recapping, shall be kept in a bound paged book kept for the purpose; and all entries therein shall be made by the engineer or other competent person.

Regulation 100. (Examination of haulage engines).—(1) It shall be the duty of a competent person to examine carefully—

(a) once at least in every 24 hours, every haulage engine, brake-wheel, rope and other appliance in use; and

(b) once at least in every seven days, every track where the haulage is effected by means of gravity or mechanical power, and every safety contrivance fitted thereon.

2. A report of every such examination shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by the person who made the examination.

Regulation 101. (Examination of haulage and travelling roads).—It shall be the duty of the foreman or other competent person to examine carefully, once at least in every seven days, the state of all haulage and travelling roads, including roads leading to all the outlets of the mine which are in use. A report of every such examination shall be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person who made the examination.

Regulation 102. (Signals on conveyor roads).—On every length of road in which a conveyor is installed for transporting loads over a distance exceeding 100 feet, there shall be provided and maintained effective means of transmitting signals from every point on the length of the road to the place at which the machinery working the conveyor is operated: Provided that the Regional Inspector may, by an order in writing, require means of transmitting signals in the reverse direction also.

Regulation 103. (Locomotives).—(1) No locomotive shall be used belowground otherwise than in accordance with the permission in writing of the Chief Inspector and subject to such conditions as he may specify.

(2) No locomotive shall be used where the gradient exceeds 1 in 15

(3) No person other than the driver shall ride on any locomotive unless authorised in writing to do so by the manager.

(4) Except during shunting operations, the locomotive shall load the tubs or set or train of tubs

Regulation 104. (Movement of wagons).—(1) No woman or adolescent shall be employed in moving railway wagons.

(2) The movement of railway wagons shall be carried on under the supervision of a competent male person.

(3) No person shall push a wagon or set of wagons except from behind, or move or attempt to move a wagon by pushing at the buffer.

(4) Where two or more wagons are moved simultaneously, the wagons shall be coupled together; and the number shall not exceed the number which can be effectively controlled. Before wagons are moved, persons likely to be endangered shall be warned by the competent person.

(5) No locomotive or wagon shall be moved when the natural light is insufficient, unless the approaching end is distinguished by a suitable light or is accompanied by a person carrying a lamp

(6) No person, other than the competent person appointed under sub-regulation (2), shall pass immediately in front of wagons moving under bins or screens, nor between moving wagons and the under-structure of the bins or screens.

(7) No person shall be upon the buffer of a locomotive or wagon in motion unless there is a secure handhold, and shall not stand thereon unless there is also a secure footplace. No person shall pass over the couplings between any two wagons while the wagons are moving.

(8) No person shall cross a line of rails by crawling or passing underneath a train or wagon, nor shall a person sit or sleep underneath a wagon.

(9) Wherever railway-wagons are specially placed so as to afford a thoroughfare, such thoroughfare shall be at least 15 feet in width.

(10) No material shall be placed or dumped within four feet from either side of a track of rails.

(11) All space between the rails at switches and crossings, in which the foot of a person is liable to be caught, shall where possible be kept filled with concrete, tar, asphalt, or wooden blocks.

Regulation 105 (Fencings and gates).—(1) Where any haulage road or tramline passes over a public road, suitable gates shall be provided to prevent danger to public from a moving tub, set or train of tubs or locomotives. Every such gate shall be fitted with a danger signal, and when the natural light is insufficient, also with warning lamps.

(2) Where occupied buildings are situated within 50 feet of any haulage road or tramline, a substantial fence shall be provided and maintained between such buildings and the haulage road or tramline.

CHAPTER XI

MINE WORKINGS

Regulation 106. (Opencast workings).—In opencast workings: the following precautions shall be observed, namely—

(1) In alluvial soil, morum, gravel, clay, debris or other similar ground—

(a) (i) the sides shall be sloped at an angle of safety not exceeding 45 degrees from the horizontal or such other angle as the Regional Inspector may permit by an order in writing and subject to such conditions as he may specify therein; or

(li) the sides shall be kept stepped, and the height of any step shall not exceed 5 feet and the breadth thereof shall not be less than the height. Provided that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, exempt from the operation of this clause any working in the case of which special difficulties exist, which in his opinion make compliance with the provisions thereof not reasonably practicable; and

(b) where any pillar is left 'in situ' for the purpose of measurement, its height shall not exceed 8 feet; and where the height of such pillar exceeds 4 feet, the base of the pillar shall not be less than 5 feet in diameter.

(2) Where float or other ore is worked by manual means on a sloping face, the face shall be benched and the sides shall be sloped at an angle of not more than 30 degrees from the horizontal. The height of any bench shall not exceed 20 feet and the breadth thereof shall not be less than the height: Provided that where the ore-body consists of hard and compact rock, the height of the bench may be increased to 25 feet:

Provided further that in case of a mine or part where special difficulties exist, the Regional Inspector may, by an order in writing and subject to such conditions as he may specify therein, relax the provisions of this sub-regulation.

(3) No tree, loose stone or debris shall be allowed to remain within a distance of 10 feet from the edge or side of the excavation.

(4) No person shall undercut any face or side, or cause or permit such undercutting as to cause any overhanging.

(5) No person shall work or travel on any ledge or footpath less than 5 feet wide, from which he will be likely to fall more than six feet, unless he is protected by guard rails, fence or rope suitably fixed and sufficiently strong to prevent him from falling.

(6) (a) No person shall carry or be permitted to carry any load along a road or footpath having an inclination of 30 degrees or more from the horizontal.

(b) Every road or footpath, along which loads are carried by human agency, shall comply with the following requirements:

(i) its breadth shall not be less than three feet; and

(ii) at every place where the inclination exceeds 15 degrees from the horizontal, level steps shall be provided such that the vertical height of every step does not exceed seven inches and the distance from the edge to the back is not less than 14 inches.

Explanation: Gang-planks used for loading purposes shall not be deemed to be part of a footpath for the purposes of this sub-regulation, provided that every gang-plank shall be so inclined or constructed as to give a secure foot-hold.

(7) (a) No woman or adolescent shall be employed to lift, carry or move a load so heavy as is likely to cause bodily injury to health to that woman or adolescent. In case of any dispute as to whether risk of bodily injury or injury to health is involved, it shall be referred to the Chief Inspector whose decision thereon shall be final.

(b) In no case shall the maximum load that may be carried by any such person over his or her body exceed 50 pounds.

Regulation 107. (Underground workings).—In every mine worked by a system of underground workings, the following provisions shall have effect, namely:—

(1) Unless permitted by a Regional Inspector by an order in writing and subject to such conditions as he may specify therein, the height of every main drive shall not be less than six feet.

(2) The dimensions of pillars or blocks formed in any vein, load, reef or mineral bed or deposit shall be such as to ensure stability of the workings during the development and stoping stages and between such stages.

(3) Such pillars or blocks shall not be split, reduced or extracted except by a method of systematic stoping. In case of any dispute as to whether the method of stoping is systematic or not, the matter shall be referred to the Chief Inspector whose decision thereon shall be final.

(4) Nothing in sub-regulation (3) shall prevent the splitting or reduction of any pillar or block of mineral bed or deposit when, in the opinion of the manager, such work is necessary for haulage, ventilation, drainage or any other purpose necessary for the proper working of the mine, if 14 days' previous notice of the intention to commence such work has been sent to the Regional Inspector. If in the opinion of the Regional Inspector such work is likely to endanger the stability of the workings, he may, by an order in writing, require the completion, before commencing such drifage or enlargement, of such protective works as he may specify.

(5) Proper provision shall be made to prevent the premature collapse of workings; and adequate steps shall be taken to isolate, control or remedy any such collapse which may occur.

Regulation 108. (Powers of Inspectors).—If in any mine or part thereof, it appears to the Regional Inspector that the provisions of regulations 106 and 107 or of any order issued under any of these regulations have not been complied with, he may give notice in writing to the owner, agent or manager requiring him to take such protective measures, within such time, as he may specify in the notice. In case of non-compliance with the requirements of the notice, the Regional Inspector may, by an order in writing, prohibit the extraction of ore in the part or parts of the mine in which protective measures are required to be taken, until the requirements specified in the notice are complied with to his satisfaction.

Regulation 109. (Workings under railways and roads etc.).—(1) No workings shall be made and no work of stoping or extraction or reduction of pillars or blocks of mineral shall be conducted at, or extended to, any point within 150 feet of any railway, or of any public works in respect of which his regulation is applicable by reason of any general or special order of the Central Government, or of any public road or building, or of other permanent structure not belonging, to the owner of the mine, without the prior permission in writing of the Chief Inspector and subject to such conditions as he may specify therein.

(2) Every application for permission under sub-regulation (1) shall specify the position of the workings of the mine in relation to the railway or public road or works or buildings or structure concerned, the manner in which it is proposed to carry out the intended operations, and the limits to which it is proposed to carry out the said operations; and shall be accompanied by two copies of a plan, showing the existing and the intended mining operations in so far as they effect the railway or public road or works or building or structure concerned. A copy of the application shall also be sent, in the case of a railway, to the railway administration concerned; and in the case of any public works as aforesaid, to such authority as the Central Government may by general or special order direct.

(3) Notwithstanding anything contained in the regulations, the stability of such railways, roads, buildings or structures shall not be endangered until they have been dismantled, diverted or vacated, as the case may be.

(4) Where the stability of such railways, roads, buildings or structures has been endangered, the Chief Inspector may have protective works executed by any other agency, and the cost thereof, as certified by the Chief Inspector, shall be defrayed by the owner of the mine and recoverable from him as a debt to the Government.

Regulation 110. (Protective works before a mine is closed).—(1) The Chief Inspector may, by an order in writing, require the owner of any mine to which Regulation 6 applies, to construct in the mine below-ground or on the surface such protective works within such time as he may specify therein.

(2) If the owner fails to construct such protective works within the time specified in the order, the Chief Inspector may have the works executed by any other agency, and the cost thereof, as certified by the Chief Inspector, shall be defrayed by the owner of the mine and recoverable from him as a debt to Government.

(3) Until the protective works have been constructed to the satisfaction of the Chief Inspector, the means of entering the mine at least two entrances, shall be kept in fact and in working order.

Regulation 111. (Workings near mine-boundaries).—(1) No working shall be made within a distance of 25 feet of the boundary of any mine properly: Provided that in the case of a disputed boundary, no working shall be made within a distance of 25 feet of the boundary claimed by the owner of an adjacent mine until

such time as a binding agreement has been reached as to the correct boundary or the question has been finally determined by a court of law.

(2) Notwithstanding anything contained in sub-regulation (1), the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, permit the workings of any mine or part thereof to extend to within any shorter distance than 25 feet aforesaid, or may require that the said workings shall not extend further than a specified distance, not exceeding 200 feet, of such boundary.

Regulation 112. (Support of workings).—(1) The roof or back, hanging wall, footwall and sides of every road and working place including airways and travelling roads to second outlets shall be made and kept secure.

(2) If the Regional Inspector is of the opinion with respect to any mine or part thereof that systematic support for the roof or back, hanging wall, footwall and sides, or either of them, ought to be provided and maintained for the purpose of securing the safety of persons employed herein, he may serve upon the owner, agent or manager a notice specifying the mine or part, stating that he is of opinion aforesaid and requiring the provision and maintenance of support in accordance with a code of Timbering Rules which he may specify in the notice.

(3) The manager shall hand over copies of the code of Timbering Rules to the underground manager and to all other supervising officials concerned, and shall also post such copies at conspicuous places in the mine.

(4) The manager, underground manager and such supervising officials shall be responsible for securing effective compliance with the provisions of the Timbering Rules, and no mine or part of a mine shall be worked in contravention thereof.

Regulation 113. (Setting of supports).—(1) Every piece of timber used as a support shall be set securely and on a secure foundation; and whenever it becomes loose or broken shall, as soon as possible, be tightened or replaced.

(2) Every crib set or pigstye used as a support shall be well built on a secure foundation, and shall be made and kept tight. Only rectangular pieces of timber shall be used as members of a crib set or pigstye.

(3) The sides of every pack used for the purpose of support shall be well built on the natural floor; and the pack shall be filled with debris or other suitable incombustible material and made as tight as practicable, over its whole area.

(4) Where sand or other material is stowed for the purpose of support, it shall be pecked tight.

(5) Any timber support dislodged by, or deliberately removed for, any operation shall be replaced with the least possible delay.

(6) In every working place or travelling road, wherein a fall of ground involving the displacement or breakage of supports has occurred, no work of clearing the fall shall be undertaken until the newly exposed roof or back, hanging wall footwall or side has been examined and made safe—if necessary by temporary supports.

Regulation 114. (Steep workings).—(1) In workings having an inclination of 30 degrees or more from the horizontal, adequate precautions shall be taken to prevent danger to persons from falling or rolling of timber, tools or other appliances or material.

(2) No person shall work or be permitted to work at any place having an inclination of 45 degrees or more from the horizontal, where he is liable to slip or overbalance, unless he is secured by a safety belt or life line or is otherwise safeguarded.

Regulation 115. (Fencing and gates etc.).—(1) (a) The top of every opencast working shall be kept securely fenced.

(b) Where an excavation which has been formed as a result of any mining operation extends within a distance of 50 feet from a public road or any building, substantial fencing shall be erected and maintained around the excavation.

(c) Where as a result of mining operations, a subsidence of the surface has taken place or is likely to take place and persons are likely to be endangered thereby, the owner, agent or manager shall keep the entire surface area securely and effectively fenced.

(2) Every entrance to a shaft, winze, ore-pass, chute, sump, stope or other dangerous place shall be provided with an efficient enclosure, barrier or gate, so designed and constructed as to effectively prevent any person from entering or falling therein.

(3) Where a shaft, winze, rise, chute, ore-pass or stope leads directly into a travelling road, such road and any working place situated on its barrier or dip side, shall be securely fenced off or otherwise protected as to prevent danger to persons from falling materials.

(4) Every entrance from a road in a mine to a part of the mine which, for the time being, is neither being worked nor being used for any purpose, by reason of any cause whatsoever, shall be provided with an efficient fence, barrier or gate so designed and constructed as to effectively prevent any person from entering that part of the mine.

(5) (a) Shafts and opencast workings temporarily or permanently out of use and any place in or about an excavation which is dangerous shall be completely filled in or kept securely fenced: Provided that if in the opinion of the Regional Inspector, any disused trench, pit or other excavation is dangerous, he may, by an order in writing, require the same to be filled in to the level of the adjacent ground.

(b) Before a mine is abandoned or the working thereof discontinued, the owner, agent or manager shall cause the top or entrance of every shaft, incline or other opening into the mine to be fenced by a structure of permanent character sufficient to effectively prevent persons falling into or entering the same.

Regulation 116. (Examination by Mates).—(1) Every place in a mine, whether belowground or in opencast workings, including travelling roads and landings, where work is carried on or where persons are stationed or required to pass shall be placed under the charge of a mate or other competent person

(2) The mine or district assigned to a competent person shall not be of such a size nor shall any additional duties other than his duties under the regulations be such, as to be likely to prevent him from carrying out in a thorough manner the duties prescribed for him under the regulations. In case of a dispute as to the foregoing, it shall be referred to the Chief Inspector whose decision thereon shall be final.

(3) (a) At the entrance to every mine or district, one or more stations shall be fixed by the manager; and no person other than the persons making the examination under clause (b) or an official shall pass beyond any such station until all the roads and working places to which such persons are required to have access, have been examined as prescribed under clause (b) and found to be satisfactorily ventilated and in safe condition. Every such station shall be ligibly marked "STATION" and shall be of such a size as to accommodate all the persons employed in the district.

(b) The competent person accompanied by such assistants as he requires shall, within two hours before the commencement of work in a shift, inspect every part of the mine or district assigned to him, in which persons have to work or pass during the shift, and all roads and working places where work is temporarily stopped, and shall ascertain the condition thereof as regards ventilation, sanitation, the presence of gases, the state of the roof or back, hanging wall, footwall and sides, and generally so far as the safety of the persons is concerned: Provided that in the case of a mine or part to which Regulation 142 applies, such inspection shall be made with an approved flame safety lamp, and that in the case of a mine or part to which Regulation 123(1) applies, a cage containing suitable birds or other means of detecting carbon monoxide gas approved by the Chief Inspector shall be carried during every such inspection.

(c) Similar inspections shall be made once at least in every four hours during which the shift continues, of all the roads and other working places to which persons engaged in the mine or district are required to have access. Where the mine is working by a succession of shifts, the competent person being relieved shall meet the person taking over charge from him in the district and shall acquaint him with all matters requiring his personal attention.

(d) The competent person shall, at the completion of his shift, record without delay the result of his inspections in a bound paged book kept for the purpose. Every such report shall be a full and accurate report of the inspections and shall include the following—

(i) the details referred to in clause (b);

(ii) the number of persons working under his charge;

(iii) such instructions for the purposes of securing the safety of the persons as the competent person may have given during his shift; and

(iv) the date and time of the inspections, the signature of the competent person and the date and time when the report was written.

(e) In case of a mine where any other system of examination of working places has been in force, the Chief Inspector may, by an order in writing and subject to such conditions as he may specify therein, permit such a system to be continued in lieu of the system of examination laid down in this sub-regulation.

(4) In the case of a shaft in the course of being sunk, the competent person or chargeman shall—

(a) have entire charge of the shaft bottom and shall remain there during the whole of his shift; he shall be the last person to ascend the shaft at the end of the shift; and if his shift is succeeded immediately by another shift, he shall not leave the bottom of the shaft until after the descent of the chargemen of the succeeding shift; and

(b) after each round of shots, and at the beginning of every shift and after every cessation of work in the shaft for a period exceeding two hours, shall examine the sides of the shaft and remove all loose pieces before persons are allowed to descend.

Regulation 117. (Occurrence of dangers).—(1) If at any time it is found by a competent person in charge of a mine or district, that by reason of any cause whatsoever, the mine or district is dangerous, he shall immediately withdraw all persons from the mine or district, and the mine or district shall be fenced off so as to effectively prevent persons entering therein.

(2) The competent person shall also immediately inform the manager or underground manager about the danger, and shall record the fact in the book kept under sub-regulation (3).

(3) The manager or underground manager shall make, or cause to be made by a competent person a careful examination of the mine or district; and no person shall, except in so far as is necessary for enquiring into the cause of the danger or for the removal thereof or for exploration, be re-admitted into the mine or district until the mine or district is reported to be safe. A report of every such examination shall be recorded without delay in a bound paged book kept for the purpose and shall be signed and dated by the person who made the examination.

(4) If any cessation of work takes place in the mine or district before the danger is removed, the mine or district shall be securely fenced off so as to effectively prevent persons entering therein.

(5) Notwithstanding anything contained in the regulations—

(a) where the danger arises from the presence of inflammable or noxious gas, the provisions of Regulation 142 shall apply; and

(b) where the appearance in any part of a mine of smoke or other sign indicates that a fire or spontaneous heating has or may have broken out, the provisions of Regulation 120 shall apply.

Regulation 118. (General precautions).—(1) Every person shall carefully examine his working place before commencing work and also at intervals during the shift. If any dangerous condition is observed, he shall cease all work at that place and shall either take immediate steps to remove such danger or inform an official or the competent person in charge of the mine or district. Where several persons are working together and one of them is in charge, the examination required by this sub-regulation shall be made by the person in charge.

(2) No person shall work in any place in which he has not been ordered to work by an official or other competent person.

(3) No person shall work or be permitted to work alone in any remote part of a mine where, if any accident occurred, he would not soon be discovered or assisted.

(4) No inexperienced person shall be employed at the face or for other work whereby he or other persons can be seriously endangered, except under the supervision and guidance of an experienced person.

(5) Every person shall ensure that tools, wood, stones or any other article are not put down, or allowed to remain, in such a position in or near a shaft, winze, or opening into a stope where work is going on as may result in their falling into the shaft, winze, or stope as the case may be.

(6) No person shall cast any material down any chute, pass or stope or other place until he has assured himself that no person is in the way.

CHAPTER XII

PRECAUTIONS AGAINST DANGERS FROM FIRE, DUST, GAS AND WATER

Regulation 119. (Precautions against fire).—(1) (a) No oil, grease, canvas or other inflammable material shall be stored in any mine except in a fire-proof receptacle. In case of workings belowground, greasy or oily waste shall be regularly removed to the surface.

(b) No person shall place or throw, or cause or permit to be placed or thrown, any naked light or lamps or cheesa stick or 'kai-piece' on or near any timber, wooden structure, or other combustible material.

(c) Where explosives are used in blasting any timber forming part of stulls, sets, chutes etc. sufficient water shall be applied to the timber both before and after firing a shot.

(2) (a) All surface structures and supports within a horizontal distance of 25 feet from all entrances to a mine shall be of fire-proof material: Provided that this sub-regulation shall not apply to temporary structures, support and coverings at the top of a shaft or winze which is in the course of being sunk and to the small lid or covering of a shaft-covering operated by the rope cappel.

(b) Combustible materials other than materials required for use within a period of 24 hours, and inflammable materials, shall not be stored within a distance of 50 feet from any entrance to a mine, which is not effectively sealed off from the workings below-ground.

(c) Dead leaves or dry vegetation shall not be allowed to accumulate or remain, within a distance of 50 feet from any entrance to a mine.

(d) No person shall light or fire or permit a fire to be lighted on the surface within a distance of 50 feet from any entrance to a mine, except by an order in writing of the manager and only for a special purpose specified in such order. All such orders shall be recorded in a bound paged book kept for the purpose: Provided that this sub-regulation shall not apply to boilers other than vertical boilers.

(3) (a) No timber or other combustible material shall be used in the construction of, or in connection with, any room housing any machinery or apparatus below-ground.

(b) No person shall light a fire or permit a fire to be lighted in any workings belowground: Provided that in the case of a mine where the provisions of Regulation 142 apply, a flame or electric welding or repairing apparatus may be used below-ground if prior permission in writing has been obtained from the Regional Inspector and subject to such conditions as he may specify. Provided further that nothing in this sub-regulation shall prevent the use, in mines to which Regulation 142 does not apply, of flame or electric welding or repairing apparatus, if permitted by an order in writing of the manager or underground manager. Every such order shall specify the person who shall be in charge of the apparatus, and it shall be the duty of such person to bring the apparatus back to the surface when no longer required belowground.

(c) No person shall leave a portable light or lamp belowground unless he has placed it in charge of some other person remaining therein.

(d) At the end of a shift, unless the mine is worked by a succession of shifts, after all persons have left the mine, all lights shall be extinguished and all power cut off.

(e) Proper provision shall be made to prevent an outbreak of fire or spontaneous heating belowground in the mine or the spread of fire to the mine from any adjoining mine; and adequate steps shall be taken to control or isolate any such fire or heating that may occur. Where in the opinion of the Regional Inspector, the provisions of this clause have not been complied with or where the steps so taken are inadequate, he may, by an order in writing, require such additional precautions or steps to be taken within such time as he may specify.

Regulation 120. (Precautions after a fire has broken out).—(1) (a) On the appearance in any part of a mine, of smoke or other signs indicating that a fire or spontaneous heating has or may have broken out, all persons other than those whose presence in the mine is deemed necessary for dealing with the fire or heating shall be immediately withdrawn from the mine. No person, other than those required for dealing with or sealing off the fire or heating, shall be re-admitted in the mine until the fire or heating has been extinguished or effectively sealed off and an examination has been made by the manager or by the underground manager and the mine has been declared to be safe. A report of every such examination shall be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person making the examination; Provided that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, permit the employment in the mine, of persons other than those required to deal with the fire or heating.

(b) The examination required by clause (a) shall be made with a cage containing suitable birds or other means of detecting carbon monoxide gas approved by the Chief Inspector.

(2) While any work of dealing with or sealing off a fire or heating belowground is in progress—

- (a) a competent person shall be present on the spot throughout;
- (b) there shall be available, during the whole time that such work is in progress, at or near the place, two smoke helmets or other suitable apparatus for use in emergency; and
- (c) a cage containing suitable birds or other means of detecting carbon monoxide gas approved by the Chief Inspector shall be kept at all places where persons are employed.

Regulation 121. (Equipment for fire-fighting).—(1) A sufficient supply of sand or incombustible dust or sufficient portable fire-extinguishers shall be provided at all entrances to a mine, at every landing and the bottom of every shaft or winze in use, at all engine rooms and at all other places where timber, canvas, grease, oil or other inflammable material is stored.

(2) At every mine, the following provisions shall be made for dealing with any fire or heating belowground—

- (a) A sufficient supply of sand or incombustible dust or sufficient portable fire extinguishers shall be kept at suitable places at the entrances to each district; and
- (b) (i) where pipes containing water under pressure are available, an adequate number of taps, not more than 400 feet apart, shall be provided on such pipes. Hose-pipes not less than 200 feet in length, with necessary fittings shall be kept readily available belowground; or
- (ii) portable water tanks fitted with hand pressure pumps and hose pipes not less than 200 feet in length and the necessary fittings shall be provided.
- (3) (a) Soda acid type extinguishers or water shall not be used for fighting oil or electrical fires.
- (b) Foam type extinguishers shall not be used for fighting electrical fires.
- (c) Fire extinguishers containing chemicals which are liable, when operated, to give off poisonous or noxious gases, shall not be provided or used belowground.

(4) A competent person shall, once at least in every three months, examine every fire-extinguisher so provided, and shall discharge and refill it as often as may be necessary to ensure that it is in proper working order. A report of every such examination or refilling shall be kept in a bound paged book kept for the purpose, and shall be signed and dated by the person making the examination or refilling.

Regulation 122. (Apparatus for testing for Carbon Monoxide).—In every mine to which Regulations 123(1) and 142 apply, there shall be kept at the mine constantly available for use two or more suitable birds or other means of detecting carbon monoxide gas approved by the Chief Inspector; Provided that the Regional Inspector may, by an order in writing, require compliance with this regulation in the case of any other mine also.

Regulation 123. (Precautions when a fire exists belowground).—(1) In every mine in which a fire or spontaneous heating exists in case of workings belowground

(whether such fire has been isolated by means of suitable seals or not), no work whatsoever shall be done in any part or section adjacent to the part or section on fire or believed to be on fire, except with the permission in writing of the Chief Inspector and subject to such conditions as he may specify.

(2) In every mine to which sub-regulation (1) and Regulation 142 applies, arrangements shall be made, once at least in every week, to ascertain the atmospheric conditions behind the seals of an area of old workings or a fire or spontaneous heating unless such seals are capable of resisting the force of an explosion: Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify exempt any mine or part thereof from the operation of this sub-regulation where in his opinion special difficulties exist which make compliance with provisions thereof not reasonably practicable.

(3) (a) Every seal erected to isolate or control a fire or spontaneous heating below ground shall be numbered, and shall be of adequate strength and so maintained as to prevent any leakage of air or gas through it. Where water is likely to accumulate behind any such stopping, there shall be provided in the stopping a suitable pipe or other device to drain away the water without permitting any leakage of air or gas etc.

(b) Where in any mine or part thereof the provisions of clause (a) have not been complied with or where in the opinion of the Regional Inspector the steps so taken are inadequate, he may give notice in writing to the owner, agent or manager requiring him to take such protective measures, within such time, as he may specify. In case of non-compliance with the requirements of the notice, the Regional Inspector may, by an order in writing, prohibit, until the requirements of the notice have been complied with to his satisfaction, the employment in the mine or part, of any person whose employment is not, in his opinion, necessary for the purpose of complying with the requirements aforesaid.

(4) A competent person shall, once at least in every seven days, inspect all seals erected to isolate or control a fire or spontaneous heating belowground. During every such inspection, he shall ascertain the general condition of every seal, check it for leakage and presence of gas, and ascertain the temperature and humidity of the atmosphere outbye the seal. For every seal, he shall place his signature, with date, on a check-board provided for the purpose at a suitable position on the seal; and this record shall be maintained for a period of not less than three months. A report of every such inspection shall also be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person making the inspection: Provided that the Regional Inspector may, by an order in writing, require such inspection to be made at such shorter intervals as he may specify.

Regulation 124. (Precautions against dust).—To prevent the liberation and accumulation of dust and the propagation of air-borne dust, the following provisions shall have effect, namely—

(1) (a) Dust shall be suppressed as close as possible, to its source of formation.
(b) As far as practicable the velocity of air in any road or working place shall be such as not to raise dust in the atmosphere.

(2) During any operations of drilling:

(a) the production of dust shall be reduced by—

- (i) using drill-bits which are sharp and of proper shape;
- (ii) keeping suitable air pressure on the bit; and
- (iii) clearing the cuttings from the bit;

(b) except in naturally wet ground, no person shall use, or cause or permit to be used, any power-drill unless a jet of water is directed into the cutting edge of the drill throughout the drilling operation, or other equally efficient device approved by the Chief Inspector is provided so as to prevent the atmosphere being charged with dust: Provided that where drilling is done by hand, it shall be sufficient if holes are kept constantly moist during such drilling.

(c) where wet pneumatic drilling is performed, a minimum of 0.6 gallons of water per minute shall be made to flow through the drill. The water shall be turned on before turning on compressed air to the drill.

(3) (a) Before any shots are fired, the roof or back, hangingwall, footwall and side in the vicinity shall where practicable and unless naturally wet throughout, be thoroughly wetted with water,

(b) As far as practicable, firing of shots shall be arranged to be carried out during the interval between two shifts; or the times for shotfiring shall be so chosen that a minimum numebr of persons are exposed to dust.

(c) After shots have been fired—

(i) the airborne dust in the place shall be actively removed by a current of air; and

(ii) after the place has been examined and declared safe, the face, walls and sides and all loose rock within a radius of 25 feet of the site of blasting shall be thoroughly wetted with water.

(4) (a) If any broken rock or ground is in a dusty condition, it shall not be moved unless it has been thoroughly wetted with water.

(b) When a tub is loaded with broken rock or other material, such material shall be thoroughly wetted with water unless it is already wet or other effective means of dust suppression are used.

(c) The descent of material in chutes, spiral convcyors, ore passes, tipplers, and skip loading and unloading installations shall be controlled so as to reduce the production of dust to the minimum.

(d) The vicinity of the top of the downcast shall, as far as practicable, be kept clear of cinder heaps, sand, mortar, cement and other dry fine material, and such material shall be so handled as to prevent it from becoming airborne.

(e) If in any operation of loading, unloading, crushing or dressing of stone or minerals, dust is likely to be produced in such quantity as may be injurious to the health of persons, effective exhaust ventilation or efficient watering or other arrangements shall be provided and maintained.

(5) In case of a mine where owing to special difficulties it is not possible to use water for dust suppression as required by the sub-regulations (2), (3) and (4) the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, grant exemption from the provisions thereof.

(6) Where dust cannot be sufficiently be suppressed to safe limits, the Chief Inspector may, by an order in writing, require that every person exposed to such dust shall be provided with a suitable respirator.

(7) The manager and the underground manager shall take steps to ensure that every device used for the suppression of dust and every respirator is properly used and maintained.

(8) If any dispute arises as to whether any place is naturally wet or whether the steps taken to suppress dust under this regulation are adequate, it shall be referred to the Chief Inspector whose decision thereon shall be final.

Regulation 125. (Precautions against irruption of gas).—Where any working is extended to within 250 feet of any stopped out area or disused workings containing of likely to contain an accumulation of inflammable or noxious gases, there shall be maintained at least one bore-hole not less than 5 feet in advance of the working. The operation of drilling the bore-hole shall be carried out under the supervision of a competent person, and where inflammable gas is present or likely to be present, no lamp or light other than an approved safety lamp or torch shall be used in any such working.

Regulation 126. (Recovery and exploratory work).—(1) After an explosion of inflammable gas has occurred in a mine, only such persons as are authorised by the manager or by the principal official present at the surface, shall be allowed to enter the mine.

(2) When it is intended or proposed to reopen a mine or part thereof, which has been isolated, sealed off or flooded with water to deal with a fire or spontaneous heating, the owner, agent or manager shall, not less than 14 days before the commencement of such work, give notice in writing of such intention or proposal to the Regional Inspector.

(3) Where it is intended to carry out any exploratory work in a mine or part belowground likely to contain irresprable atmosphere—

(a) no party of less than three persons shall be allowed to proceed to carry out such work; and

(b) every such party shall carry a cage containing suitable birds or other means of detecting carbon monoxide gas approved by the Chief Inspector.

Regulation 127. (Danger from surface water).—(1) Where any mine or part thereof is so situated that there is any danger of inrush of surface water into the mine or part, adequate protection against such inrush shall be provided and maintained. In case of any dispute as to whether such protection is adequate or not, it shall be referred to the Chief Inspector whose decision thereon shall be final.

(2) No workings shall be made in any mine vertically below—

- (a) any part of any river, canal, lake, tank or other surface reservoir; or
- (b) any spot lying within a horizontal distance of 50 feet from either bank of a river or canal or from the boundary of a lake, tank or other surface reservoir,

except with the permission in writing of the Chief Inspector and subject to such conditions as he may specify.

(3) Every application for permission under sub-regulation (2) shall be accompanied by two copies of a plan and section showing the existing position of the workings of the mine, the proposed layout of workings, the depth of the workings from the surface, the position and depth of any stopped out area in the neighbourhood, all faults and other geological disturbances and such other particulars as may affect the safety of the mine or of the persons employed therein.

Explanation.—Where sand or alluvium are lying in the course of a river, canal, lake, tank or reservoir, the depth from the surface shall be reckoned from the surface or hard ground underlying such sand or alluvium.

Regulation 128. (Danger from underground inundation).—(1) Proper provision shall be made in every mine to prevent irruption of water or other liquid matter from the workings of the same mine or of an adjoining mine.

(2) (a) No working which has approached within a distance of 200 feet of any disused or abandoned workings (not being workings which have been examined and found to be free from accumulation of water or other liquid matter), whether in the same mine or in an adjoining mine, shall be extended further except with the prior permission in writing of the Chief Inspector and subject to such conditions as he may specify: Provided that if any heavy seepage of water is noticed in any working approaching, but not within 200 feet of any such disused or abandoned working, such working shall be immediately stopped, and the Chief Inspector and the Regional Inspector shall forthwith be informed about the occurrence. The working shall not be extended further except with the prior permission in writing of the Chief Inspector and subject to such conditions as he may specify.

Explanation.—For the purpose of this sub-regulation, the distance between the said workings shall mean the shortest distance between the said workings measured in any direction whether horizontal, vertical or inclined.

(b) Every application for permission under clause (a) shall be accompanied by two copies of a plan and section showing the outline of such disused or abandoned workings in relation to the workings which are approaching the said workings and such other information as may be available in respect of the said workings.

(c) No such working shall exceed 8 feet in width or height; and there shall be maintained at least one bore-hole near the centre of the working face, and sufficient flank holes on each side and where necessary, bore-holes above and below the workings, at intervals of not more than 15 feet. All such bore-holes shall be, and shall be constantly maintained, at sufficient distance in advance of the working, and such distance shall in no case be less than 10 feet. These precautions shall be carried out under the direct supervision of a competent person specially authorised for the purpose.

(d) The precautions laid down in clause (c) shall also be observed in any other working where any heavy seepage of water is noticed whether approaching disused or abandoned workings or not.

Regulation 129. (Internal flooding).—(1) When the owner, agent or manager intends or proposes, by introducing water from the surface or from any other part of the mine or from an adjacent mine, to flood any part of the workings of his mine, he shall give in writing not less than 14 days' notice of such intention or proposal to the Chief Inspector and the Regional Inspector and to the management of all adjoining mines and of such other mines as might be affected by such flooding: Provided that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, permit such operations to be commenced on any day prior to the expiry of the said 14 days:

Provided further that the Regional Inspector may, by an order in writing, either prohibit any such operation or require that such operation shall not be commenced until such precaution as he may specify, have been taken to his satisfaction.

Explanation.—For the purposes of this sub-regulation, a mine shall have the meaning assigned to it under Regulation 33.

(2) If the operations in respect of which notice is given under sub-regulation (1), are not commenced within 60 days from the expiry of the said 14 days, the notice shall be deemed to have lapsed and the provision of the sub-regulation (1) shall apply as if no such notice had been given.

Regulation 130. (Construction of water dams, etc.)—(1) Where in any mine it is intended to construct a reservoir, dam or other structure to withstand a pressure of water or other material which will flow when wet, or to control an inrush of water, the owner, agent or manager shall give in writing not less than 14 days' notice of such intention to the Regional Inspector. Every such notice shall be accompanied by two copies of plans and sections showing the design and other details of the proposed construction: Provided that where the safety of the mine or of the persons employed therein is seriously threatened, the provisions of this regulation shall be deemed to have been complied with if the said notice is given to the Regional Inspector as soon as the work of construction is commenced.

(2) The Regional Inspector may, by an order in writing, require such modifications or alterations to be made in the design of any such reservoir, dam or structure, as he may specify.

CHAPTER XIII

VENTILATION

Regulation 131. (Standard of ventilation).—(1) It shall be the duty of the owner, agent or manager of every mine to take such steps as are necessary for securing that there is constantly produced in all parts of the mine belowground, ventilation adequate to clear away smoke, steam and dust; to dilute gases that are inflammable or noxious so as to render them harmless; to provide air containing a sufficiency of oxygen, and to prevent such excessive rise of temperature or humidity as may be harmful to the health of persons. If any dispute arises as to whether the ventilation in a mine or part thereof is adequate or not, it shall be referred to the Chief Inspector whose decision thereon shall be final.

(2) For the purpose of this regulation, a place shall not be deemed to be in a safe state for persons to work or pass therein if the air contains either less than 19 per cent. of oxygen or more than 0.5 per cent. of carbon dioxide or any noxious gas present in quantity likely to affect the health of any person; and such place shall not be deemed to be normally kept free from inflammable gas if the percentage of such gas at any point in that place exceeds one and a quarter.

(3) If the Regional Inspector is of the opinion, with respect to any mine or part thereof, that the ventilation is not adequate, he may, by an order in writing, require the installation and maintenance of such a mechanical ventilator as is capable of producing adequate ventilation in the mine or part.

Regulation 132. (Mechanical ventilators and their fittings).—(1) Every mechanical ventilator shall be installed in a fire-proof housing situated at a safe distance from the opening, shaft or winze; and every mechanical ventilator, other than an auxiliary fan, shall be so designed and maintained that the current of air can be reversed when necessary.

(2) In every mine to which regulation 142 applies, if electricity is used for driving the mechanical ventilator, a separate circuit shall be provided between the main distribution points at the mine and the drive-motor of the ventilator.

(3) There shall be provided and maintained at every main mechanical ventilator—

(a) a suitable pressure-recording gauge or water-gauge; and

(b) a recording instrument by which the speed of the ventilator shall be continuously registered.

(4) At every shaft or winze ordinarily used for lowering or raising or persons or material, where a mechanical ventilator is installed, there shall be provided a properly constructed air-lock: Provided that unless the Regional Inspector so required by an order in writing, the provision of this sub-regulation shall not apply to a shaft or winze where a mechanical ventilator was installed before the coming into force of these regulations.

(5) The flow of air produced by a mechanical ventilator shall, as far as practicable, be so arranged as to aid the natural ventilation.

(6) A competent person shall be appointed in writing by the manager to be in charge of every mechanical ventilator. He shall not be entrusted with any other additional duties.

(7) In every mine in which a mechanical ventilator is in use, the quantity of air circulating in every ventilating district shall be measured once at least in every 30 days and recorded in a bound paged book kept for the purpose.

Regulation 133. (Standing Orders).—The manager of every mine in which a mechanical ventilator other than an auxiliary fan is installed, shall submit to the Regional Inspector within 60 days of the coming into force of these regulations, and in case of a new installation, within 30 days of the installation, Standing Orders specifying the action that shall be taken with respect to the withdrawal of persons from the mine or part thereof in the event of a stoppage of the ventilator.

(2) The Regional Inspector may approve of such Standing Orders, either in the form submitted to him or with such additions and alterations as he may think fit; and the Standing Orders so approved shall be enforced at the mine.

(3) A copy of the Standing Orders shall be posted in conspicuous places in the mine, both above and belowground.

Regulation 134. (Air-ways).—(1) The intake air shall be so arranged as to travel away from all stagnant water.

(2) In any mine or part where a mechanical ventilator is used, every drive, crosscut, winze or rise which is a connection between a main intake airways and a main return airway shall, until it has ceased to be required and has been sealed off be provided with at least two doors so spaced that whenever one door is opened, the other door can be kept closed. Steps shall be taken to ensure that at least one of the doors is always closed. Any such connection which has ceased to be so required, shall be effectively sealed.

Regulation 135. (Brattices, doors and stoppings).—(1) There shall be provided and maintained in every mine such number of stoppings, doors and other devices as may be adequate to ensure compliance with the provisions of Regulation 131. In case of any dispute as to the adequacy of such ventilation devices, it shall be referred to the Chief Inspector whose decision thereon shall be final.

(2) (a) The space between the frame of every ventilation door and the roof and sides of the road, shall be built up with masonry or concrete, not less than 10 inches in thickness.

(b) Every such door shall be self-closing; and whenever opened, it shall be closed as soon as possible, and shall not be propped or fixed so as to remain open.

(c) If such door is required to be frequently kept open for the passage of men or material, there shall be throughout every working shift, a door-attendant at the door.

(d) If a door is not in use, it shall be taken off its hinges and placed in such a position that it shall not cause any obstruction to the air current.

(3) (a) Every stopping between the main intake and main return airways shall be constructed of masonry or brickwork, not less than 10 inches in thickness or such greater thickness as may be required by the Regional Inspector, and shall be faced with a sufficient thickness of lime or cement plaster to prevent leakage of air.

(b) Every stopping shall be kept accessible for inspection.

(4) Every ventilation stopping or door shall be maintained in efficient working order and good repair.

(5) A competent person shall, once at least in every seven days, examine every airway, ventilation stopping and door in use, and shall record the result thereof in a bound paged book kept for the purpose and shall sign the same and date his signature.

Regulation 136. (Auxiliary fans).—(1) Every auxiliary fan:

(a) shall be installed, located and worked in such a manner that:

(i) a sufficient quantity of air shall, at all times, reach it so as to ensure that it does not re-circulate air; and

(ii) there is no risk of the air which it circulates being contaminated by any substantial quantity of inflammable or noxious gases or dust; and

(b) shall have an air-duct for conducting the air to or from the face or blind end; and such air-duct shall be so maintained as to minimise any leakage of air and to ensure an adequate supply of air to within 15 feet of the face or blind end.

(2) No auxiliary fan shall be started, stopped, removed, replaced or in any way altered or interfered with, except by or on the authority of an official.

(3) No person shall enter or remain in any place which is dependent for its ventilation on an auxiliary fan, unless such fan is operating efficiently. Whenever the ventilation of any such place has been interrupted, whether by the stoppage of the fan or otherwise, no person shall so enter or remain except for the purpose of restoring the ventilation or unless the place has been examined by a competent person and declared safe.

Regulation 137. (Precautions against fire in ventilation appliances).—The covering of all shafts, winzes or rises sealed off or covered for ventilation purposes, all fan drifts, dust or casings and parts of fans within such drifts, ducts or casings, and all ventilation doors shall be constructed of fire-proof material: Provided that this regulation shall not apply to the small lid or covering of a shaft covering, operated by the winding rope.

Regulation 138. (Ventilation plans to be brought up-to-date).—As soon as any alteration is made in the ventilation of a mine, involving the erection or removal of a stopping or the alteration in the position or installation of a ventilator below-ground, the erection, removal, alteration or installation, as the case may be, shall be shown on the ventilation plan maintained under Regulation 61.

Regulation 139. (Obstructions, interruptions and alterations).—(1) No material or debris shall be allowed to accumulate in any level, drive, crosscut or any other part of the workings belowground so as to impede the ventilation.

(2) All roads and workings belowground which are not adequately ventilated shall be fenced or barricaded so as to effectively prevent persons entering the same.

(3) If any person becomes aware of any obstruction in, or interference with, or deficiency of, ventilation in any mine or part thereof, he shall—

(a) if it falls within his power to remedy such obstruction, interference or deficiency, immediately take steps to do so; or

(b) cease all work at that place, and shall forthwith inform his superior official of such obstruction, interference or deficiency.

(4) No person shall alter the general system of ventilation in any mine or part except with the authority of the manager: Provided that in an emergency, an official of the mine may carry out such alteration as he may deem necessary for the safety of persons, but he shall as soon as possible inform his superior official and the manager about the same.

Regulation 140. (Precautions against gas during de-watering and re-opening).—

(1) No disused mine or shaft shall be de-watered except under the constant supervision of a competent person; and during such de-watering, approved safety lamps or torches shall be exclusively used, and there shall be kept burning at every place where persons are at work at least one approved flame safety lamp.

(2) (a) The first inspection of a mine or part which is re-opened after a discontinuance of mining operations for a period exceeding seven days and of any part of a mine after being de-watered shall be made by a competent person with an approved flame safety lamp; and during such inspection, no additional light or lamp other than an approved electric torch or lamp shall be used.

(b) The result of every such inspection shall be recorded in a bound paged book kept for the purpose, and shall be signed and dated by the person making the inspection.

Regulation 141. (Precautions against inflammable and noxious gases).—(1) For the purpose of this regulation, inflammable gas shall be deemed to have been found or detected when it is indicated by the lowered flame of a flame safety lamp or, where methane indicators are used, they indicate one and a quarter per cent or more of inflammable gas.

(2) When any person detects the presence of inflammable gas, he shall not brush or waft it out, but shall immediately withdraw from the place and shall inform his superior official and the underground manager about the same.

(3) Where in any place in a mine, inflammable or noxious gas is detected, all persons shall be withdrawn from the place, and the place shall be immediately fenced off so as to effectively prevent persons entering the same. The competent person in charge shall, without delay, take steps to remove the gas by improving the ventilation.

(4) During the removal of such gas all persons, except those necessary for such removal, shall be withdrawn from the return side of the ventilating district in which the gas has been detected unless the quantity of gas is, in the opinion of the competent person, so small that no such withdrawal is necessary: Provided that where the danger arises from the presence of inflammable gas, no naked light shall be used in the ventilating district in which the gas is detected.

(5) No person shall be re-admitted into the place where the gas was detected until a competent person has examined the place and has reported that the place is free from gas. Every such examination shall be made with an approved flame safety lamp and, in the case of noxious gas, also with a cage containing suitable birds or other means of detecting carbon monoxide gas approved by the Chief Inspector.

(6) Particulars of every occurrence referred to in sub-regulation (2) and of every examination made under sub-regulation (5), together with a statement as to where and when the gas was found and when it was removed, and in case of inflammable gas, the percentage thereof shall be recorded in a bound paged book kept for the purpose. Every such entry shall be signed and dated by the competent person making the report, and countersigned and dated by the manager.

Regulation 142. (Safety lamps to be used in gassy mines).—No lamp or light other than an approved safety lamp or torch or other installation permitted under the Indian Electricity Rules, shall be used or permitted to be used below-ground in any mine,—

- (a) in any part of a mine in which an explosion or ignition of inflammable gas has occurred;
- (b) in any ventilating district in which inflammable gas has been found; and
- (c) in any place in which, in the opinion of the Regional Inspector, inflammable gas is likely to be present in such quantities as to render the use of naked lights dangerous:

Provided that if safety lamps are not immediately available in the case of any mine to which clauses (b) and (c) apply, the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, grant a temporary exemption from the operation thereof until such time as safety lamps can be obtained:

Provided further that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, exempt any mine or part thereof from the operation of this regulation on the ground that on account of the special character of the mine, the use of safety lamps is not necessary therein.

Regulation 143. (Contrabands).—In every mine or part to which Regulation 142 apply, the following provisions shall have effect, namely—

(1) No person shall have in his possession belowground any cigar, cigarette, 'biri' or other smoking apparatus, or any match or other apparatus of any kind capable of producing a light, flame or spark: Provided that nothing in this sub-regulation shall be deemed to prohibit the use belowground of any apparatus for the purpose or shot-firing or of relighting safety lamps, of a type approved by the Chief Inspector.

(2) For the purpose of ascertaining whether any person proceeding below-ground has in his possession any article as aforesaid, a competent person other than the banksman, if any, shall be appointed to search every such person immediately before he enters the mine. The competent person shall be on duty throughout the shift, and no duties other than those under this regulation shall be entrusted to him.

(3) The competent person so appointed shall make a thorough search for the articles aforesaid, and in particular shall,—

- (a) search or turn out all pockets;

- (b) pass his hand over all clothings, and
- (c) examine any article in the possession of the person searched

Such search shall be made every time a person proceeds belowground notwithstanding that he has been previously also searched

(4) If the competent person suspects that the person searched is concealing any article as aforesaid, he shall detain him, and as soon as possible, refer the matter to the manager or underground manager. No such person shall be allowed to enter the mine until the manager or other superior official is satisfied that the person has no such article in his possession

(5) Any person who refuses to allow himself to be so searched or who on being searched is found to have in his possession any of the articles aforesaid, shall be guilty of an offence against this regulation

Regulation 144. (Determination of environmental conditions)—In every mine having workings belowground extending to a depth of more than 100 feet from the surface, determinations shall, once at least in every 30 days be made of temperature, humidity and such other environmental conditions as the Regional Inspector may by an order in writing stipulate, at the blind end of every driftage and at such other points as the Regional Inspector may specify

Regulation 145. (Appointment of Ventilation Officers)—In the case of any mine having extensive workings belowground, if the Regional Inspector by an order in writing so requires, the manager shall be assisted by a Ventilation Officer, holding such qualification as the Regional Inspector may specify, who shall be responsible for supervising the maintenance of the ventilation system of the mine

CHAPTER XIV

LIGHTING AND SAFETY LAMPS

Regulation 146. (Fixed lighting)—(1) Adequate fixed lighting arrangements shall be made during working hours—

- (a) on the surface where the natural light is insufficient in every engine house, in the vicinity of every working shaft, at every open-cast working, at every shunting or marshalling yard, and at every place where persons have to work or pass,
- (b) belowground—
 - (i) in all travelling roads normally used by 50 or more persons during any shift
 - (ii) at every landing station in use in the vicinity of every working shaft and winze,
 - (iii) at the top and bottom of every self-acting incline,
 - (iv) at every place on a haulage road at which tubs are regularly coupled or uncoupled or attached to or detached from a haulage rope,
 - (v) at every place at which tubs are regularly filled mechanically,
 - (vi) at every room and place containing any engine, motor or other apparatus, and
 - (vii) at every first-aid station belowground

Provided that in mines to which regulation 142 applies, the lighting fixtures shall comply with the provisions of Indian Electricity Rules

(2) The lighting provided in a mine shall, as far as possible, be so arranged as to prevent glare or eye strain

(3) Where electric energy is available at the mine, the lighting arrangement made under sub-regulation (1) shall be by electrical means

(4) Where electric lighting is used, an additional light or lamp having no connection with electric supply shall be kept continuously burning—

- (i) belowground, in every landing and in every engine room, and
- (ii) on the surface, after dark, at the top of every working shaft and in every engine room

(5) Every electrical lamp-fitting shall be so constructed as to protect it from accidental damage, and adequate precautions shall be taken to prevent lamps being damaged from shotfiring

Regulation 147. (Every person to carry a light).—The owner, agent or manager shall provide every person employed belowground with a light or lamp adequate to enable him to perform his duties in a proper and thorough manner; and no such person shall proceed or remain belowground without such light or lamp.

Regulation 143. (Standards of lighting).—(1) If any dispute arises as to whether any lamp or light is of adequate lighting performance or not, it shall be referred to the Chief Inspector whose decision thereon shall be final

(2) The Chief Inspector may, from time to time, by notification in the Official Gazette, specify.—

(a) the type of lamp to be provided to specified categories of persons employed in a mine; or

(b) the standard of lighting to be provided in specified areas or places in a mine.

Regulation 149. (Maintenance and examination of safety lamps).—In every mine or part thereof in which the use of safety lamps is for the time being required by or in pursuance of the regulations, the following provisions shall have effect, namely—

(1) A competent person appointed for the purpose shall clean, trim, examine and mark securely all such lamps before they are issued for use, and no such lamp shall be issued for use unless it is in safe working order and securely locked.

(2) A competent person appointed for the purpose shall examine every safety lamp at the surface immediately before it is taken belowground for use; and shall assure himself, as far as practicable from external observation, that such lamp is in safe working order and securely locked. The person so appointed shall not perform any other duties, except in a mine where the number of persons employed belowground at any time is not more than 50.

(3) A competent person appointed for the purpose shall examine every safety lamp on its being returned after use. If on such examination, any lamp is found to be damaged or misused, he shall record the nature of the damage or misuse in a bound paged book kept for the purpose. Every such entry shall be countersigned and dated by the manager.

(4) The manager, underground manager, or a competent person appointed for the purpose shall, once at least in every seven days, examine thoroughly all safety lamps in use, and shall record the result of examination of each lamp in a bound paged book kept for the purpose.

(5) No person shall be appointed as a competent person under this regulation unless he holds a Manager's, Foreman's or Gas-testing Certificate.

Regulation 150. (Use of safety lamps).—(1) Every safety lamp shall be numbered; and so long as the lamp is in use, the number thereof shall be legibly maintained.

(2) A competent person appointed for the purpose shall maintain a correct record of the lamps issued from and returned to the lamp-room; and in the record so maintained, the number of the lamp issued to any person shall be entered against his name.

(3) If any person returns to the lamp-room a lamp other than the one issued to him, he shall explain the cause and circumstances of the same.

(4) No unauthorised person shall either himself take or give out any safety lamp from the lamp-room.

(5) Every person who receives a lamp shall satisfy himself that it is complete and in good order; and should he find any defect therein, he shall immediately return it to the lamp-room.

(6) No person shall wilfully damage or improperly use or unlock or open, or attempt to unlock or open any safety lamp.

(7) Should any person find that the safety lamp in his possession has become defective he shall at once carefully extinguish the flame, if any, and report the defect to his superior official.

Regulation 151. (Maintenance and repairs of safety lamps).—(1) Every safety lamp shall be properly assembled and maintained in good order. If any lamp is found to be defective or damaged, it shall not be issued for use until the defect or damage has been remedied.

(2) If the wires of any gauze of a flame safety lamp are broken or burnt away, the gauze shall not be reconditioned for further use.

(3) Damaged and defective gauzes, glasses and other parts of a safety lamp shall not be kept or stored in the safety lamp-room.

(4) No glass of a safety lamp and no bulb of an electric safety lamp, shall be replaced except by a glass or bulb of such type as the Chief Inspector may from time to time specify by notification in the Official Gazette.

Regulation 152. (Precautions to be taken in safety lamp-rooms).—(1) No unauthorised person shall enter the safety lamp-room.

(2) No person shall smoke in the safety lamp-room

(3) In every flame safety lamp kept for the purpose of inspection or of testing for or detecting the presence of inflammable gas, no oil, other than an oil of a type approved by the Chief Inspector shall be used.

(4) Where petrol, benzol, or any other highly volatile spirit is used in safety lamps, the following precautions shall be observed—

(a) lamps shall be cleaned, refitted and refilled in a separate room;

(b) only such quantity of volatile spirit as is required for one working day shall be kept in any such room;

(c) internal relighters shall not be taken out of lamps and cleaned, repaired or refitted on the same table where lamps are cleaned, refitted or refilled; and

(d) adequate number of suitable fire extinguishers shall be provided and kept ready for use in every such room.

CHAPTER XV

EXPLOSIVES AND SHOTFIRING

Regulation 153. (Type of explosives for use in mines).—No explosive shall be used in a mine except that provided by the owner, agent or manager. The explosives provided for use shall be of good quality and, as far as can be known, in good condition.

Regulation 154. (Storage of explosives).—(1) No owner, agent or manager shall store, or knowingly allow any other person to store, within the premises of a mine any explosives other than in accordance with the provisions of rules made under the Indian Explosives Act, 1884.

(2) Explosives shall not be taken into or kept in any building except a magazine duly approved by the Licencing Authority: Provided that the Regional Inspector may, by an order in writing and subject to such conditions as he may specify, permit the use of any store or premises specially constructed at or near the entrance to a mine, for the temporary storage of explosives intended for use in the mine or of surplus explosives brought out of the mine at the end of a shift.

(3) Explosives shall not be stored below ground in a mine except with the approval in writing of the Chief Inspector and subject to such conditions as he may specify. Such storage shall be done only in a magazine or magazines duly licenced in accordance with the provisions of rules made under the Indian Explosives Act, 1884.

(4) Every licence granted by the Licencing Authority for the storage of explosives, or a true copy thereof, shall be kept at the office of the mine.

Regulation 155. (Cartridges).—(1) No explosive, other than fuse or a detonator, shall be issued for use in a mine, or taken into or used in any part of a mine, unless it is in the form of a cartridge. Cartridges shall be used only in the form in which they are delivered.

(2) The preparation of cartridges from loose gunpowder, the drying of gunpowder, and the reconstruction of damp cartridges shall be carried out by a competent person and only in a place approved by the Licensing Authority and in accordance with the rules made under the Indian Explosives Act, 1884.

Regulation 156. (Magazines, stores and premises to store explosives).—(1) Every magazine, or store or premises, where explosives are stored shall be in charge of a competent person who shall be responsible for the proper receipt, storing and issue of explosives.

(2) Explosives shall not be issued from the magazine unless they are required for immediate use. If any explosives are returned to the magazine or store or premises, they shall be re-issued before fresh stock is used.

(3) Explosives shall be issued only to competent persons upon written requisition signed by an official authorised for the purpose, and only against their signature or thumb impression. Such requisition shall be preserved by the person in charge of the magazine or store or premises.

(4) The person in charge of the magazine or store or premises shall maintain in a bound paged book kept for the purpose a clear and accurate record of explosives issued to each competent person and a similar record of explosives returned to the magazine or store or premises.

Regulation 157. (Cases and canisters for carrying explosives).—(1). No explosive shall be issued from the magazine or taken into any mine except in a case or container of substantial construction and securely locked. Containers made of iron or steel shall be heavily galvanised, and no case or container provided for carrying detonators shall be constructed of metal or other conductive material.

(2) No detonator shall be kept in a case or container which contains other explosives, materials or tools; and two or more types of detonators shall not be kept in the same case or container: Provided that nothing in this sub-regulation shall restrict detonators in the same case or container for use in a wet working or in a sinking shaft.

(3) No detonator shall be taken out from a case or container unless it is required for immediate use.

(4) No case or container shall contain more than 10 pounds of explosives; and no person shall have in his possession at one time in any place more than one such case or container: Provided that nothing in this sub-regulation shall prohibit the conveyance of larger quantity of explosives in bulk for supplying an underground magazine:

Provided further that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, permit the carrying of a larger quantity of explosives in a single case or container, or the use, at one time in one place, of more than one such case or container.

(5) Every case or container shall be numbered; and as far as practicable, the same case or container shall be issued to each shotfirer.

(6) The key of every case or container shall be retained by the shotfirer in his own possession throughout his shift.

Regulation 158. (Transport of explosives).—(1) While explosives in bulk are lowered or raised in a shaft or winze, a distinguishing mark shall be attached to the cage, skip or bucket; or the person in charge of explosives shall travel in the same cage, skip or bucket.

(2) Every cage, skip or bucket containing explosive shall be gently lowered or raised, and it shall be the duty of the banksman or bellman, as the case may be, to adequately warn the winding engineman before the cage, skip or bucket is set in motion.

(3) Where explosives are being carried on a ladder, each case or container shall be securely fastened to the person carrying it.

(4) No person other than a blaster shall carry any priming cartridge into a shaft which is in the course of being sunk. No such cartridge shall be so carried except in a thick felt bag or other container sufficient to protect it from shock.

Regulation 159. (Reserve stations).—No case or container containing explosives shall be left or kept below-ground except in a place appointed by the manager or underground manager for the purpose and so situated that it is not frequented by workpersons. Every such place shall be kept clean, safe and adequately fenced.

Regulation 160. (Blasters).—(1) The preparation of charges, the charging of holes and the firing of shots shall be carried out by or in the presence of a competent person, in these regulations referred to as a 'blaster'.

(2) No person shall be qualified to be appointed, or to be, a blaster in any mine unless he is the holder of Manager's, Foreman's, Mate's or Blaster's certificate or its equivalent.

(3) If 30 or more persons are employed below-ground at any one time in any mine or district under the charge of a competent person appointed under Regulation 116, such person shall not perform the duties of a blaster.

(4) No person whose wages depend on the amount of mineral, rock or debris obtained by firing shots, shall be appointed to perform the duties of a blaster.

(5) The manager or underground manager shall fix from time to time the maximum number of shots that a blaster may fire in any one shift; and such number shall not, unless the Regional Inspector by an order in writing and subject to such conditions as he may specify therein otherwise permits, exceed 50, and shall be based upon—

- (i) the time normally required to prepare or fire a shot in accordance with the provisions of these regulations;
- (ii) the time required for that blaster to move between places where shots are fired;
- (iii) the assistance, if any, available to him in the performance of his said duties; and
- (iv) any other duties assigned to him, whether statutory or otherwise:

Provided that where the Regional Inspector is of the opinion that it is necessary for the proper observance of the provisions of the regulations that the number of shots so fired shall be reduced, he may, by an order in writing, require the manager to fix a lower maximum number of shots as foresaid.

(6) The number of detonators issued to, and in the possession of, a blaster during his shift shall not exceed the maximum number of shots that he is permitted to fire under sub-regulation (5).

Regulation 161. (Shotfiring tools).—(1) Every blaster on duty shall be provided with—

- (a) a suitable electric lamp or torch;
- (b) a tool, made entirely of wood, suitable for charging and stemming shotholes;
- (c) a scraper made of brass and suitable for cleaning out shotholes; and
- (d) where fuses are used, a knife for cutting off fuses and unless machine capped fuses are provided, also a pair of suitable crimpers for crimping detonators.

(2) No tool or appliance other than that provided as above shall be used by a blaster.

Regulation 162. (Drilling, charging, stemming and firing of shotholes).—(1) No drill shall be used for boring a shothole unless it allows a clearance of at least 1/8th inch over the diameter of the cartridge of explosive which it is intended to use.

(2) No shothole shall be charged before it is thoroughly cleaned.

(3) Before any shothole is charged, the direction of the hole shall, where practicable, be distinctly marked on the roof or other convenient place.

(4) No detonator shall be inserted into a priming cartridge until immediately before it is to be used; Provided that in case of wet workings, priming cartridges may be prepared at the nearest convenient dry place. Detonators once inserted into a priming cartridge shall not be taken out.

(5) The charge in any shothole shall consist of one or more complete cartridges of the same diameter and the same type of explosive.

(6) No shothole shall be fired by a fuse less than four feet in length. When fuses are used and more than one shots are fired in one round, the fuses shall be graduated in length so that two or more shots do not explode together.

(7) The blaster shall, to the best of his judgement, ensure that no charge in a shothole is overcharged, having regard to the task to be performed.

(8) Every shothole shall be stemmed with sufficient and suitable non-inflammable stemming so as to prevent the shot from blowing out. Only sand loosely filled in, or soft clay lightly pressed home, or compact mixture of sand and clay or water shall be used as stemming.

(9) A wad of paper or some other suitable material about one inch thick approved by the Regional Inspector, shall be inserted between the charge and the stemming.

(10) In charging or stemming a shothole, no metallic tool, scraper or rod shall be used; and no explosives shall be forcibly pressed into a hole of insufficient size.

(11) Blasting gelatine or other high explosives shall not be lighted in order to set fire to fuses; but specially prepared 'kai-pieces' of such explosives may be so used. Such 'kai-pieces' shall be prepared only in the magazine, and a correct record of the issue, use and return of such 'kai-pieces' shall be maintained in records of explosives kept under these regulations.

(12) All surplus explosives shall be removed from the vicinity of a shothole before light is brought near it for the purpose of lighting the fuse.

(13) As far as practicable, a shot shall be fired by the same blaster who charged it.

(14) Not more than 10 holes shall be fired in one round unless they are fired electrically.

(15) Where a large number of shots has to be fired, blasting shall, as far as practicable, be carried out between shifts.

(16) No shothole shall be charged except those which are to be fired in that round; and all shotholes which have been charged shall be fired in one round.

(17) In any mine in which explosives other than gunpowder are used, every shot shall, if so required by the Regional Inspector, be fired electrically.

(18) No person shall remove any stemming otherwise than by means of water or an approved device, or pull out any detonator lead or remove any explosive, from any charged shothole.

Regulation 163. (Electric shotfiring).—Where shots are fired electrically, the following provisions shall have effect, namely:—

(1) No delay action detonator shall be used except with the previous permission in writing of the Chief Inspector and subject to such conditions as he may specify.

(2) (a) No shot shall be fired except by means of a suitable shotfiring apparatus; and the number of shots fired at any one time by the apparatus shall not exceed the number for which it is designed.

(b) Every electrical shot-firing apparatus shall be so constructed and used that—

(i) it can only be operated by a removable handle or plug. This handle or plug shall not be placed in position until a shot is about to be fired and shall be removed as soon as a shot has been fired; and

(ii) the firing circuit is made and broken either automatically or by means of a push-button switch.

(c) (i) No apparatus shall be used which is defective; and every apparatus shall, once at least in every three months, be cleaned and thoroughly overhauled by a competent person.

(ii) If the apparatus fails to fire all the shots in a properly connected circuit, the blaster shall return the apparatus to the surface as soon as possible, and it shall not be used again unless it has been tested on the surface and found to be in safe working order.

(iii) The result of every overhaul, test or repair as aforesaid shall be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person making the overhaul, test or repair.

(3) No current from a lighting or power circuit shall be used for firing shots.

(4) The blaster shall—

(a) retain the key of the firing apparatus in his possession throughout his shift;

(b) use a well-insulated cable of sufficient length to permit him to take proper shelter, and in no case, shall it be less than 60 feet;

(c) before coupling the cable to the firing apparatus, couple up the cable himself to the detonator leads;

(d) take care to prevent the cable coming into contact with any power or lighting cable or other electrical apparatus;

(e) take adequate precautions to protect electrical conductors and apparatus from injury;

- (f) himself couple the cable to the firing apparatus; and before doing so, see that all persons in the vicinity have taken proper shelter at a safe distance; and
- (g) after firing the shots and before entering the place of firing, disconnect the cable from the firing apparatus.
- (5) When more than one shot are to be fired at the same time—
 - (a) care shall be taken that all connections are properly made;
 - (b) all shots to be fired shall be connected in series;
 - (c) the circuit shall be tested either for electrical resistance or for continuity before connecting it to the firing apparatus. Such a test shall be made with an apparatus specifically designed for the purpose and after the provisions of regulation 164 have been complied with; and
 - (d) the cable to the shotfiring apparatus shall be connected last.

Regulation 164. (Taking shelter, etc.).—(1) The blaster shall, before a shot is fired by him, see that all persons in the vicinity have taken proper shelter. He shall also take suitable steps to prevent any person approaching the shot and shall himself take adequate shelter. Provided that in an opencast working, the blaster shall give sufficient warning, by an efficient system of signals or by other means approved by the manager, over the entire area of the danger zone, that is to say, an area of ground falling within a radius of 1,000 feet from the place of firing.

(2) Where the workings, either above or below ground, offer insufficient protection against flying fragments or missiles, adequate shelter or other protection shall be provided.

(3) When two working places below ground have approached within 10 feet of each other, the blaster shall not fire any shot in any one of the said workings unless all persons have been withdrawn from the other working place and the same has been so fenced off as to prevent persons inadvertently coming in direct line of the shot.

(4) Where shots are to be fired in two or more adjoining stopes, the blasters shall so arrange to time the firing of shots that shots in only one of the stopes are fired at one time.

Regulation 165. (Use of Permitted Explosives).—(1) No explosive other than a Permitted Explosive shall be used in any mine or part to which Regulation 142 applies or where the Regional Inspector may, by an order in writing, require the use of such explosive.

(2) In any mine or part in which the use of Permitted Explosives is required under sub-regulation (1), no detonator shall be used unless it is an electric detonator with a copper tube.

(3) No shot of a Permitted Explosive shall be fired except by means of a shot-firing apparatus of a type approved by the Chief Inspector and subject to such conditions as he may from time to time lay down by notification in the Official Gazette: Provided that the Chief Inspector may, by an order in writing and subject to such conditions as he may specify, permit the use of any other shot-firing apparatus.

(4) In any mine to which Regulation 142 applies, the following provisions shall have effect, namely—

(a) Notwithstanding anything contained in the regulations, no shot shall be stemmed or fired by any person who does not hold either Manager's or Foreman's Certificate, or a Mate's Certificate together with a Gas-testing Certificate.

(b) If in a ventilating district, presence of inflammable gas is detected in any place, no shothole shall be charged, stemmed or fired in that place or in any other place situated on its return side till such place has been cleared of gas and declared safe.

(c) Immediately before charging a shothole or a round of shotholes, and again before firing the shots, the blaster shall carefully test for inflammable gas at all places within a radius of 60 feet of the place of firing.

Regulation 166. (Inspections after shotfiring).—(1) After a shot has been fired, the blaster or the competent person in charge of the working place under Regulation 116 shall not enter, or allow any other person to enter, the place until the area is free from dust, smoke or fumes. He shall, before any other person enters the place, make a careful examination and with his assistants, if any, make the

place safe. No other person shall enter the place until the examination has been made and the place has been declared to be safe in all respects: Provided that where guards have been posted, they shall not be withdrawn until the place has been declared safe:

Provided further that in the case of opencast workings, after shots have been fired, an all-clear signal shall be given except in the case of a misfire.

(2) After shots have been fired, all persons engaged in clearing minerals, rock or debris shall look for unexploded cartridges and detonators. If such a cartridge and detonator is found, it shall be removed and shall as soon as possible be handed over to a blaster or other official.

Regulation 167, (Misfires).—(1) The number of shots which explode shall, unless shots are fired electrically, be counted by the blaster and another competent person authorised for the purpose; and unless it is certain that all the shots have been exploded, no person shall re-enter or be permitted to re-enter the place until 30 minutes after the firing or shots: Provided that where shots are fired electrically, this interval may be reduced to not less than five minutes after the source of electricity has been disconnected from the cable.

(2) In the event of a misfire, the entrance or entrances to the working place shall be effectively barricaded or fenced so as to prevent access; and no work other than that of locating or relieving the misfire shall be done therein until the misfire has been located and relieved. In opencast workings, it shall be sufficient to mark the place of the misfire with a red flag.

(3) In the event of a misfire, the tamping but not the wad of paper or other material referred to in Regulation 162 (9) may be slugged out with compressed air or water under pressure, or removed by such other means as may be approved in writing by the Chief Inspector and subject to such conditions as he may specify. The hole shall thereafter be reprimed and fired.

(4) If the misfire contains a detonator, the leads or fuse thereof shall be attached by a string to the shotfiring cable or some distinctive marker.

(5) Except where the misfire is due to a faulty cable or a faulty connection, and the shot is fired as soon as practicable after the defect is remedied, or where a shot has been reprimed and fired under sub-regulation (3) another shot shall be fired in a relieving hole which shall be so placed and drilled in such a direction that at no point shall it be nearer than 12 inches from the misfired hole. The new hole shall be bored in the presence of a blaster, preferably the same person who fired the shot.

(6) After a relieving shot has been fired, a careful search for cartridges and detonators, if any, shall be made in the presence of the blaster amongst the material brought down by the shot: Provided that in the case of workings below-ground if no such cartridge or detonator is recovered, the tubs into which the material is loaded shall be marked and a further search made on the surface. As far as possible, the search for the detonators and cartridges and the loading of any ore, stone or debris which may contain a detonator, shall be carried out without the aid of tools.

(7) If a misfired hole is not dislodged by a relieving shot, the procedure laid down in sub-regulations (5) and (6) shall be repeated.

(8) When a misfired shot is not found, or when a misfired shot is not relieved or reblasted, the blaster shall, before leaving the mine, give information of the failure to such official as may relieve or take over charge from him. He shall also record, in bound paged book kept for the purpose, a report on every misfire, whether suspected relieved or reblasted or not relieved or reblasted. It shall be the responsibility of the relieving official also to sign the report and later to record in the said book the action taken.

(9) The blaster of the next shift shall locate and reblast the misfired hole, but if after a thorough examination of the place where the misfire was reported to have occurred, he is satisfied that no misfire had actually occurred, he may permit drilling in the place.

Regulation 168. (Precaution in case of sockets, etc.).—(1) Before the commencement of drilling in any working place, the competent person in charge of the place shall see that all loose rock is removed from the face and the area lying within a radius of 6 feet of the proposed shothole is thoroughly cleaned or washed down with water and carefully examined for the presence of misfires or sockets.

(2) If any socket is found or if a misfired hole cannot be dealt with in the manner prescribed in Regulation 167, it shall be securely plugged with a wooden plug; and no person other than an official or a competent person appointed for the purpose shall remove or attempt to remove any such plug.

(3) No person shall bore out a hole that has once been charged, or attempt to withdraw a charge either before firing or after a misfire, or decpen or tamper with empty holes or sockets left after shotfiring.

Regulation 169. (Duties of blaster at the end of his shift).—Immediately after the end of his shift, the blaster—

(a) Shall return all unused explosive to the magazine, or where a store or premises or underground magazine is provided under Regulation 154, to such store or premises; and

(b) shall record, in a bound paged book kept for the purpose, the quantity of explosive taken, used and returned, the places where shots were fired, the number of cartridges used in each shot and the number of shots fired by him, and misfires, if any. Every such entry shall be signed and dated by him.

Regulation 170. (General precautions regarding explosives).—(1) No person, whilst handling explosives or engaged or assisting in the preparation of charges or in the charging of holes, shall smoke or carry or use a light other than an enclosed light, electric torch or lamp. Provided that this sub-regulation shall not prohibit the use of an open light for lighting fuses.

(2) No person, shall take any light other than an enclosed light, electric torch or lamp into any explosive magazine or store or premises.

(3) No person shall have explosives in his possession except as provided for in these regulations or secrete or keep explosives in a dwelling house.

(4) Any person finding any explosives in or about a mine shall deposit the same in the magazine or store or premises. Every such occurrence shall be brought to the notice of the manager or underground manager.

CHAPTER XVI

MACHINERY AND PLANT

Regulation 171. (Use of certain machinery belowground).—(1) No internal combustion engine or steam boiler shall be used belowground in a mine except with the permission in writing of the Chief Inspector and subject to such conditions as he may specify.

(2) In every mine or part of a mine to which Regulation 142 applies, only flame-proof electric apparatus and equipment shall be used belowground unless otherwise provided for under the Indian Electricity Rules.

Regulation 172. (General provisions about construction and maintenance of machinery).—All parts and working gears, whether fixed or movable, including the anchoring and fixing appliances, of all machinery and apparatus used as or forming part of the equipment of a mine, and all foundations in or to which any such appliances are anchored or fixed shall be of good construction, suitable material, adequate strength and free from patent defect, and shall be properly maintained.

Regulation 173. (Apparatus under pressure).—(1) All apparatus used as or forming part of the equipment of a mine, being apparatus which contains or produces air, gas or steam at a pressure greater than atmospheric pressure shall be so constructed, installed and maintained as to obviate any risk of fire, bursting, explosion or collapse or the production of noxious gases.

(2) Every air receiver shall be fitted with a safety valve and an air-gauge showing the pressure as that in excess of the atmospheric pressure.

(3) Before an air-receiver is cased in or put in commission, the engineer or other competent person shall subject it to a hydraulic test at a pressure at least one-and-a-half times the maximum permissible working pressure. A similar test shall be made after every renewal or repair and in any case at intervals of not more than three years. The result of every such test shall be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person carrying out the test.

(4) The supply of air for air-compressors shall be drawn from a source free from dust and fumes.

Regulation 174. (Precautions regarding moving parts of machinery).—(1) Every winch or windlass shall be provided with a stopper, pawl or other reliable holder.

(2) Every fly-wheel and every other dangerous exposed part of any machinery used as, or forming part of, the equipment of a mine shall be adequately fenced by suitable guards of substantial construction to prevent danger; and such guards shall be kept in position while the parts of the machinery are in motion or in use, but they may be removed for carrying out any examination, adjustment or repair if adequate precautions are taken.

(3) No person shall, or shall be allowed to, repair, adjust, clean or lubricate machinery in motion where there is risk of injury.

(4) No person shall or shall be allowed to shift or adjust a driving belt or rope while the machinery is in motion unless a proper mechanical appliance is provided for the purpose.

(5) No person in close proximity to moving machinery shall wear, or be permitted to wear, loose outer clothing.

(6) No unauthorised person shall enter any engine room or in any way interfere with the engine.

Regulation 175. (Engine room exits).—Every engine, motor, transformer and battery charging room, and every room in which highly inflammable materials are stored shall be kept clean, and be provided with at least two exits. Every such exit shall be properly maintained and kept free from obstruction.

Regulation 176. (Working and examination of machinery).—(1) No machinery shall be operated otherwise than by or under the constant supervision of a competent person.

(2) In every mine to which Regulation 142 applies, no person shall be appointed to supervise or operate any electrical machinery, apparatus or appliance unless he holds a Gas-testing Certificate.

(3) Every person in charge of any machinery, apparatus or appliance shall, before commencing work, see that it is in proper working order, and if he observes any defect therein, he shall immediately report the fact to the manager, engineer or other competent person.

(4) Every person in charge of an air-receiver shall see that no extra weight is added to the safety valves and that the permissible pressure of air is not exceeded.

(5) A competent person or persons appointed for the purpose shall, once at least in every 24 hours, make a thorough inspection of all machinery and plant in use, and record the result thereof in a bound paged book kept for the purpose. In respect of electrical machinery and plant, the competent person shall be an engineer or electrician holding qualifications specified in the Indian Electricity Rules.

CHAPTER XVII

MISCELLANEOUS

Regulation 177. (Fences).—(1) Every tank or reservoir or other dangerous place in or about a mine shall be kept securely fenced.

(2) Every fence erected on the surface shall, once at least in every seven days, be examined by a competent person. A report of every such inspection shall be recorded in a bound paged book kept for the purpose and shall be signed and dated by the person who made the examination.

(3) Any fence, gate or barricade may be temporarily removed for the purpose of repairs or other operations, if adequate precautions are taken.

(4) If any dispute arises as to whether any fence, barrier or gate provided under the regulations is adequate, proper or secure, or the precautions taken under sub-regulation (3) are adequate, it shall be referred to the Chief Inspector whose decision thereon shall be final.

Regulation 178. (Notices).—Where at any place smoking or unauthorised entry is prohibited, notices to that effect shall be posted at conspicuous places at every entrance to the place.

Regulation 179. (Storage belowground of calcium carbide).—Calcium carbide shall not be taken or kept belowground until about to be used, except in a secure metal case or container containing not more than one pound in weight thereof. No person shall have in the mine at any one time more than one such case or container.

Regulation 180. (Danger from poisonous substances).—(1) At every mineral dressing or separating plant where cyanide or other poisonous substance is used, there shall be kept a sufficient supply of a satisfactory and efficient antidote for poisoning.

(2) Water containing poisonous or injurious matter in suspension or solution must be effectively fenced off to prevent inadvertant access to it, and notice boards shall be put up at suitable places to warn persons from making use of such water.

(3) In no case shall water containing any poisonous matter in suspension or solution in a dangerous concentration be permitted to escape.

Regulation 181. (General Safety).—No person shall negligently or wilfully do anything likely to endanger life or limb in the mine, or negligently or wilfully omit to do anything necessary for the safety of the mine or of the persons employed therein

Regulation 182. (Use of protective equipment).—Where it appears to the Regional Inspector or Chief Inspector that any person or class of persons is exposed to undue hazard by reason of the nature of his employment, he may, by a general or special order, require the provision and use of gloves, boots, goggles or other protective equipment.

Regulation 183. (Information about sickness).—Every official or competent person shall, in case of sickness or of lawful absence, give early and sufficient notice thereof to his superior official or the underground manager or the manager, as the case may be, so that a substitute may be arranged.

Regulation 184. (Manpower Distribution Plan).—During the first week of every month, a survey shall be made of the number of persons normally employed in each district and other places belowground in the mine; and a sketch plan showing the results of such a manpower survey shall be kept in the office of the mine. A copy of the plan shall also be kept with the attendance clerk.

Regulation 185. (Sirdars and Overmen).—(1) No person shall be appointed as a competent person under Regulations 37, 72, 101, 120(2), 123(5), 135(5), 136(3) and 140(2) unless he is the holder of either a Foreman or a Manager's Certificate.

(2) No person shall be appointed as a competent person under Regulations 116, 117, 125, 128(2), 140(1) and 141, unless he is the holder of either a Mate's or a Foreman's or a Manager's Certificate. In case of a mine to which Regulation 142 applies, every person holding a Mate's Certificate shall also hold a Gas-testing Certificate.

Regulation 186. (Delayed application of certain provisions).—The provisions of Regulations 34, 35, 37, 38 and 185 shall not come into force until such date as the Central Government may notify in the Official Gazette.

Regulation 187. (Officials to be literate).—No person shall be appointed as an official of a mine after the coming into force of these regulations, unless he is literate and conversant with the language of the district in which the mine is situated or with the language understood by a majority of the persons employed in the mine: Provided that so much of this regulation as requires a person to be conversant with the language of the district or of the majority of persons shall not apply to underground managers, engineers, surveyors and other senior officials.

Regulation 188. (Writing of reports).—If any person required to make any report by the regulations, rules or bye-laws or any order made thereunder is unable to write, he shall be present when his report is written for him, and shall have it read over him, and shall then sign or attach his thumb-mark to it. The person writing the report shall certify that it has been read over to the person for whom it was written, and shall sign the same and date his signature.

Regulation 189. (Payment of fees).—The fees payable under the regulations shall be paid directly into the Treasury or a branch of the State Bank of India, and the receipt of the Treasury or Bank shall be sent to the Chief Inspector along with the application to which the fee relates.

Regulation 190. (Place of accident not to be disturbed).—When any accident in a mine results in serious bodily injury to three or more persons or in any loss of life, the place of accident shall not be disturbed or altered before the arrival of, without the consent of an Inspector unless such disturbance or alteration is necessary to prevent further accidents, to remove bodies or to rescue persons from danger, or unless discontinuance of work at the place would seriously impede the working of the mine: Provided that should an Inspector fail to make an inspection within 72 hours of the time of accident, work may be resumed at the place of the accident.

Regulation 191. (Taking samples from mines).—Where for official purposes, an Inspector considers it necessary to take samples of any mineral, rope or other material, the owner, agent or manager shall make over to him such samples in such quantities as he may require.

Regulation 192. (Powers of Chief Inspector to grant exemptions).—If the circumstances at any mine or part thereof are such as to render any provision of any regulation not reasonably practicable, the Chief Inspector may, by an order in writing and to such extent and subject to such conditions as he may specify, relax the said provisions.

Regulation 193. (Signing of returns, notices and correspondence).—All returns and notices required under, or correspondence made in connection with, the provisions of the Act and of the regulations, rules, byelaws and orders made thereunder shall be signed by the owner, agent or manager of the mine: Provided that the owner may, by a Power of Attorney, delegate this function to any other specified person.

Regulation 194. (Chief Inspector, etc., to exercise powers of the Regional Inspector).—Any power granted under these regulations to the Regional Inspector may be exercised by the Chief Inspector or a Deputy Chief Inspector or any other Inspector authorised in writing in this behalf by the Chief Inspector.

Regulation 195. (Appeals against orders of the Regional Inspector).—Whenever any dispute about any matter contained in the Act and in the regulations, rules, bye-laws and orders made thereunder arises between the owner, agent or manager and the Regional Inspector, the matter shall be referred to the Chief Inspector, whose decision thereon, except as prescribed under Regulation 196, shall be final.

Regulation 196. (Appeals against certain orders of the Chief Inspector).—The owner or agent of any mine affected or likely to be affected by any order passed by the Chief Inspector under provisos to Regulation 34(2) and regulations 109(4), 110 and 111(2), may prefer an appeal to the Mining Board constituted under Section 12 of the Act, or if no Mining Board has been so constituted for the part of India in which the mine or part thereof is situated, to the Central Government; and the order of the Mining Board or the Central Government thereon shall be final.

FIRST SCHEDULE

FORM

(See Regulations 3, 7, 8)

Notice of Opening etc.

Dated.....

From

.....

To

1. The Chief Inspector of Mines in India, Dhanbad.

2.

3.

Sir,

I have to furnish the following particulars of (a)

Name of mine

Name of mineral worked

1. Situation of the mine—Village, Police Station, Sub-Division (Taluk), District & State.	2. Name and postal address of owner and Managing Agents, if any.
3. Particulars of situation (Post Office, Railway Station, Rest House, distances therefrom, means of travelling, etc). (b)	
4. Name and postal address of agent.	5. Name of manager and number and class of his certificate.
6. Date (c) of	<div style="display: flex; align-items: flex-start;"> <div style="font-size: 4em; margin-right: 10px;">{</div> <div> (a) first opening of the mine (b) discontinuance, abandonment or closing of the mine (c) re-opening of the mine (d) Occupation by present owner or change of ownership (e) Appointment or change or termination of appointment of— <div style="margin-left: 20px;"> agent manager underground manager surveyor engineer </div> </div> </div>
7. Date on which it is intended to commence mining operations. (b)	

Yours faithfully,

Signature

Designation : Owner/Agent/Manager

Date

Instructions

- (a) Mention the matter about which notice is being given.
- (b) For new mines only.
- (c) Fill whatever is applicable.

FORM II
(See regulation 4)

1. Name and Postal Address of Mine.....Mineral
2. Name and Postal Address of Owner
3. Name and Postal Address of Managing Agents, if any
4. Name and Postal Address of Agent, if any
5. Name and Postal Address of Manager.....
6. Situation of Mine : District,State
7. Tables A to C, duly filled in, are attached.

Date

Output of Mica	Crude : Cwts.	lbs.	Quantity consigned or sold locally		Closing stock	
			Cwts.	lbs.	Cwts.	lbs.
Crude Mica						
Dressed Mica						
Mica splittings						
Waste Mica						

If any other mineral such as beryl is also produced from the mine, particulars relating to such minerals may be given in Table A2.

Mineral worked (a)	Output of mineral (b) (c)	Despatches (c)		Closing stock (c)	Metal extracted if any	
		For export market	For internal consumption		Name	Quantity (c)

Instructions

- (a) If more than one mineral is raised or metal extracted separate figures should be given for each one of them.
- (b) If the mineral is dressed, processed or treated before despatch, the output of the dressed, processed or treated mineral (instead of crude ore) should be given.
- (c) The figures should be in Cwts. and lbs. in case of Asbestos, beryl, graphite and steatite, in Troy ozs., in case of Gold and Silver, in carats, in case of precious stones and semi-precious stones and in tons for others.

TABLE B. EMPLOYMENT

Number of working days during the quarter

Aggregate No. of man-days worked		Aggregate No. of man-days lost on account of absence (c) (d)				
(a)	(b)					
Men	Women	Sickness	Accident	Leave	Other causes	Total
<i>Below ground</i>						
Miners						
Others						
<i>Open cast Workings :</i>						
Miners						
Others						
<i>Above ground</i>						
TOTAL						

If there is any marked increase or decrease in attendance or absence, please account for it.

Instructions.

- (a) The information should cover all persons "employed" in the mine as defined in clause (h) of section 2 of the Mines Act, 1952, including clerical and subordinate supervisory staff.
- (b) Total number of man-days worked is obtained by adding the daily attendances for the whole quarter.
- (c) Total number of man-days lost by absence is obtained by adding the daily absences for the whole quarter.
- (d) Absences should include all cases in which a person is "scheduled to work" or is expected to turn up for work, but does not. All permanent employees are to be treated as "scheduled" to work. So far as temporary or casual employees are concerned, a person who attended work during the preceding week should be considered as scheduled to work, during the week under consideration unless (i) he has reported his intention to quit, (ii) his services have been terminated by the management, or (iii) he does not turn up for work during the whole week; a person who has not worked during the preceding week should be considered as "scheduled to work" only from the day on which he joins work during the week under consideration. Absences due to strike, lockout, lay-off or maternity leave should not be included as absences.

TABLE C : HOURS OF WORK AND EARNINGS.

1. Information is required to be furnished in the following tabular form in respect of one complete working week during the last month of the quarter (a).

	Average daily attendance during the week(b)	Aggregate number of man-hours worked during the week(c)	Total cash payments for work done during the week (d).			
			Basic wages	Dearness allowance	Other cash payments	Total
<hr/>						
<i>Below Ground :</i>						
Foremen & Mates	.	.				
Miners	.	.				
Others	.	.				
<hr/>						
<i>Open cast Workings :</i>						
Foremen & Mates	.	.				
Miners	.	.				
Others	{ Men	.				
	{ Women	.				
<hr/>						
<i>Above Ground :</i>						
Clerical & Supervisory staff	.	.				
Others	{ Men	.				
	{ Women	.				

2. Estimated value of concessions in kind given during the week(s) Rs.....

3. Normal hours of Production Shifts	From	To
1st Shift.		
2nd Shift.		
3rd Shift.		

4. If there is any major change in wages or hours of work as compared to the preceding quarter please account for the change.

Instructions

- (a) The information should cover all persons "employed" as in Table B. Particulars relating to payments etc. to monthly-paid staff should be included on a *pro-rata* basis.
- (b) Average daily attendance is obtained by dividing the aggregate number of attendances on all the shifts on all days during the week by the number of working days. Days on which the mine did not work for whatever cause should not be treated as working days.
- (c) Aggregate number of man-hours worked during the week is obtained by adding up for the whole week the number of man-hours worked each day. The number of man-hours worked on each day is obtained by summing up the number of hours worked by each person attending work on each of the shifts during the day including over-time worked if any.
- (d) Total cash payments should include all remuneration payable and paid for work done during the week prior to deductions, if any, towards fines, provident funds or on account of other welfare provisions, should not be included. Bonuses not payable each pay-period should also not be included.
- (e) Include over-time payments.
- (f) Concession in kind such as supply of foodstuffs, etc., free or at subsidised prices should be estimated in terms of the difference between the monetary value of the stuffs at cost prices and the value realised by sale at concessional prices.

1st SCHEDULE

FORM III

(See regulation 5)

Annual Return for the year ending on the 31st December, 19 .

1. Name of mine. Mineral worked.....
2. Postal address of mine.
3. Date of opening
4. Date of closing (in closed)
5. Situation of mine { District
State
6. { Name of owner
Postal address of owner
7. { Name of Managing Agents (if any)
Postal address of Managing Agents (if any)
8. { Name of Agent (if any) as defined in Section 2(c) of the Mines Act, 1952.
Postal address of agent.
9. { Name of Manager
Postal address of Manager
10. Other supervisory staff employed as at the end of the year
(Please give designations and numbers employed).
11. (a) Whether machinery is used.
(b) Nature of power used, if any, (e.g. electricity, steam, compressed air, etc.)
12. Tables A to G, duly filled in, are attached

Certified that the information given above and in Tables A to G below is correct.

Signature_____

Designation : Owner/Agent/Manager.

Date _____

TABLE A : EMPLOYMENT

Classification	Total Number of man-days worked during the year by—(a)			Number of days worked during the year	Average daily Number of persons employed (b)				Total wage or salary bill for the year (c)
	Direct Labour	Con-tarct labour	Total		Men	Women	Adoles-cents	Total	
(1)	(2A)	(2B)	(2C)	(3)	(4A)	(4B)	(4C)	(4D)	(5)

Below ground :

Foremen and mates .
Miners .
Others .

Open cast workings :

Foremen and mates .
Miners .
Others(d) .

Above ground :

Clerical and supervisory Staff (excluding the Superior supervisory staff)
Workers in the attached factory, workshop or mineral dressing plant
Others.

TOTAL

Instructions

- (a) Obtained by adding up the daily attendances for the whole year.
- (b) Obtained by dividing the number of man-days worked by the number of working days. The total shown in column (4D) should agree with the quotient obtained by dividing the total shown in column (2C) by the number of working days shown in column (3).
- (c) Include all cash payments including bonuses, Employers' contributions to provident funds, welfare activities, etc., and concessions in kind should not be included.
- (d) Persons employed in the removal of over-burden should be included among "Others" and not among miners.

TABLE B : TYPE AND AGGREGATE HORSE-POWER OF ELECTRICAL APPARATUS

(1) Electricity generated, purchased or received otherwise (in kw).

Generated	Purchased or received
-----------	-----------------------

- (a) For own use
- (b) For sale

(2) System of supply (whether continuous current or alternating current).
 Voltage of supply
 Periodicity
 Source of supply

(3) Voltage at which current is used for :—

Above ground	Below ground
--------------	--------------

- (a) Lighting
- (b) Power

(4) Length of cables in feet
 (i) High pressure
 (ii) Medium pressure

(5) Total number and aggregate horse-power of motors installed above ground for—

In use		In reserve	
--------	--	------------	--

No. of units	Total H.P.	No. of units.	Total H.P.
--------------	------------	---------------	------------

Winding
 Ventilation
 Haulage
 Pumping
 Workshops including foundry, smith, etc.
 Mineral treatment
 Plants
 Miscellaneous (specify)

TOTAL

(6) Total number and aggregate horse-power of motors installed below ground for—

In use		In reserve	
--------	--	------------	--

No. of units	Total H.P.	No. of units	Total H.P.
--------------	------------	--------------	------------

Haulage
 Ventilation
 Pumping
 Portable Machines
 Conveyors, Loaders, etc.
 Electric Traction
 (Locomotives, etc.)
 Miscellaneous (specify)

TOTAL

TABLE C : TYPE AND AGGREGATE HORSE-POWER OF MACHINERY AND EQUIPMENT
(Other than electrical apparatus)

	In use		In reserve	
	No. of units	Total H.P.	No. of units	Total H.P.
I. (a) Boilers				
(b) Steam Turbines				
(c) Diesel Engines				
(d) Gasoline, Gas or Oil Engines other than Diesel Engines				
(e) Hydraulic Turbines or water wheels				
(f) Air Compressors				
TOTAL				
II. Total number and aggregate horse-power of machinery installed above ground for :				
Winding				
Ventilation				
Haulage				
Pumping				
Mineral dressing plant				
Workshops (including Smithy, Foundry etc).				
Miscellaneous (specify)				
TOTAL				
III.—Total number and aggregate horse- power of machinery installed below ground for :				
Winding				
Ventilation				
Haulage				
Pumping				
Miscellaneous (specify)				
TOTAL				

TABLE D.—EXPLOSIVES, ROCKDRILLS, MECHANICAL VENTILATORS, ETC.

Name of explosive*	Quantity used in lbs.	Type of detonators used (ordinary or electrical)	Number of detonators used.
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Mechanical Ventilators

Rock drills make & type etc.	Number in use	Name and size	Position installed	Total quantity of air delivered per minute	Water gauge
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*Figures should be given separately for each kind of explosive used.

TABLE E1 : OUTPUT OF MICA.*

Cwts.

Lbs.

Output
of
Mica { Crude
Dressed

Quantity consigned
or sold locally

Value of the quantity
consigned or sold locally **

Cwts.

Lbs.

Rs.

As.

Crude mica

Dressed mica

Mica splittings

Waste Mica

Instructions

*If any other mineral such as beryl is also produced from the mine, please give particulars regarding such minerals in Table E2.

** The value required is the pit-head or ex-factory value. Royalty figures will not be accepted in place of value.

TABLE E2.—OUTPUT OF MINERALS OTHER THAN MICA.

Name of mineral raised	Output of the mineral (b)		Pit-head value of the mineral raised (c)	Metal extracted, if any	Quantity of metal or metals extracted at the mine (d)	Value of metal or metals extracted at the mine (e)
	As received from the mine	After processing, if any				
	2A	2B	3	4	5	6
TOTAL :						

Instructions

- (a) If more than one mineral is extracted, give separate figures for each mineral.
- (b) The figures should be stated.
- (i) in the case of gem-stones, in carats;
- (ii) in the case of alum, amber, asbestos, beryl, graphite, jade-stone, scatite, tin-ore, tungsten-ore, radio-active minerals and rare minerals such as molybdenite, monazite, pitch-blende, samarskite, tantalite and triplite, in cwt., and lbs. ;
- (iii) in the case of clay, limestone, magnesite, marble, phosphatic rock, slate, salt, and other stone, and all metalliferous ores except those referred to above, in tons.
- (c) "Value" should be calculated upon actual or estimated selling price at the mine. Any charges incurred in transporting the mineral outside the mine property should not be included. Royalty figures will not be accepted.
- (d) Each metal should be shown separately :
- (i) in the case of gold, silver and other precious metals, in Troy ounces ;
- (ii) in the case of tin, in cwt. and lbs. ;
- (iii) in the case of other metals, in tons and cwts.
- (e) The value of each metal should be given separately.

TABLE F.—LEAVE WITH WAGES AND COMPENSATORY HOLIDAYS

	Monthly paid employees	Others
1. Number of persons entitled to leave with wages during the year.		
2. Number of persons granted leave during the year.		
3. Aggregate number of man-days of leave granted during the year.		
4. Total amount paid as leave wages.		
5. Number of persons exempted from Section 28. (Weekly holidays.)		
6. Aggregate number of compensatory holidays earned during the year and carried over from previous year.		
7. Aggregate number of compensatory holidays granted.		
8. Aggregate number of compensatory holidays due to be granted at the end of year.		

TABLE G.—CRECHES, CANTEENS, REST-SHELTERS, ETC.

1. Do you maintain a creche ?

(Vide Mines Creche Rules).

If so (a) do you supply milk to the children?

(b) do you supply foodstuffs to the children?

(c) Number of creche attendants employed.

(d) Number of nurses employed—(Whole time)
(Part time)

(e) Average daily attendance of children at the creches.

2. Do you maintain a canteen?

(Vide Mines Rule 44).

If so, (a) do you provide cooked food?

(b) do you provide refreshments?

(c) do you provide tea, coffee or other beverages?

(d) expenditure incurred, if any, on the canteen by the mine-owner during the year.

3. Do you maintain rest shelters for the workers ? (Vide Mines Rule 62).

If so, (a) how many ? State floor area in each case.

(b) average number of persons using the shelter(s).

4. Do you employ welfare officers?

(Vide Mines Rule 72).

If so, how many?

5. Do you have a pit-head bath?

6. Do you have an ambulance room?

FIRST SCHEDULE

FORM IV

(See regulation 9)

Notice of Occurrence.

Dated—19

From

To

1. The Chief Inspector of Mines in India, Dhanbad.

2. The District Magistrate/District Collector.

Sir,

I have to furnish the following particulars of a fatal accident/a serious accident/a dangerous occurrence which occurred at the—Mine.

1. Situation of mine (Village, & State)	Police Station,	District	Mineral worked	Name and postal address of owner

		Number of persons		
		Killed	Seriously injured.	
2. Date and hour of occurrence.	Place and location in mine.			
3. Classification of occurrence. (a)		Cause and description.		
4. (a) Name of persons killed. (b)	Nature of employment.	Age	Sex	Nature of injury and if fatal, cause of death.
(b) Name of persons injured (b)				

Yours faithfully,

Owner/Agent/Manager.

Instructions

(a) Under one or other of the following heads, namely:—

- (1) Explosions and ignitions of inflammable gas;
 - (2) Falls of ground, (a) Falls of roofs; (b) Falls of side, wall or face;
 - (3) Haulage, (a) above ground; (b) below ground;
 - (4) In shafts, (a) overwinding of cages or other means of conveyance; (b) breakage of ropes, chains or drawgear; (c) while ascending or descending by machinery; (d) by falling; (e) by falling objects (excluding falls of ground); (f) miscellaneous;
 - (5) Explosives;
 - (6) Machinery, (a) above ground; (b) below ground;
 - (7) Suffocation by gases;
 - (8) Irruption of water;
 - (9) Premature collapse of workings;
 - (10) Outbreak of fire, or spontaneous heating;
 - (11) At railway sidings belonging to the mine;
 - (12) Electricity; and
 - (13) Miscellaneous, (a) above ground; (b) below ground.
- (b) Particulars in respect of every person killed or injured are to be given in Annexure.

ANNEXURE TO FORM IV

Particulars of Deceased/Injured Person

(To be given separately in respect of every deceased/injured worker).

1. General:

- (i) Name of mine
- (ii) Owner
- (iii) District
- (iv) State
- (v) Mineral produced
- (vi) Name of injured worker

2. Time of Accident:

- (i) Date, time and shift in which the accident occurred
- (ii) Number of shifts worked per day
- (iii) Time when the worker began work on the day of the accident.

3. Occupation and experience of the worker:

- (i) Job he was doing at the time of accident
- (ii) Was it his regular occupation?
- (iii) If yes, length of experience at the occupation; at your mine including previous experience
- (iv) If no, how long employed at this job
- (v) Total experience in mining, coal and non-coal
- (vi) Details of experience in mining work.

4. Place of accident:

- (i) If underground, state:
 - (a) Whether depillaring area (slope) or development area
 - (b) Name or number of seam or deposit
 - (c) Dimensions at the place of accident
- (ii) If on surface, state whether on railway, tramway, power plant or elsewhere (to be specified)
- (iii) If other, state whether open-workings, shaft or elsewhere (to be specified).

5. Nature of injury:

- (i) State whether fracture, amputation, laceration, bruise, sprain, crushing injury or other (to be specified)
- (ii) Part of body injured (to be specified precisely).

6. Degree of disability.

- (i) If fatal, date and time of death
- (ii) If permanent disablement, specify:
 - (a) the part or parts of the body lost, if any
 - (b) the part or parts of body gone out of use
 - (c) whether disablement was total or partial
- (iii) If temporary disablement, number of days forced to remain idle.

7. Return to duty:

- (i) Date when returned to work
- (ii) Whether returned to regular job or some other work (to be specified).

8. Responsibility for the accident:

- (i) Was any safety regulations contravened?
- (ii) If so, by whom?
- (iii) What action was taken against the offender?
- (iv) Could the accident have been avoided and if so, how?

9. Compensation:

State amount of compensation paid, if any.

FIRST SCHEDULE

FORM V

(See regulation 10)

Notice of disease notified under Section 25

From _____

To

1. The Chief Inspector of Mines in India, Dhanbad.
2. The District Magistrate/District Collector.

Dated _____ 19__.

Sir,

I have to furnish the following particulars with respect to an occupational disease contracted by a person employed in the _____ mine.

1. Situation and postal address of the mine _____
2. Mineral worked _____
3. Name and postal address of owner _____
4. Name and postal address of managing agent, if any _____

Particulars of persons affected

5. Name (in Block Capitals) _____
6. Caste or surname _____
7. Permanent address : Village _____ Police Station _____
District _____ State _____
8. Sex _____
9. Date of birth or age _____
10. Occupation _____
11. Date of commencement of employment _____




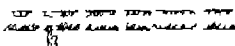
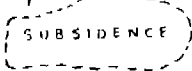
Particulars of disease etc.









12. Nature of disease from which the person is suffering (state stage) _____
13. Date of detection of disease _____
14. Name and address of Medical Practitioner suspecting disease _____




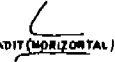

Signature _____

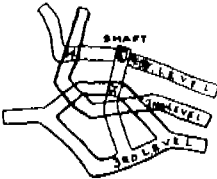
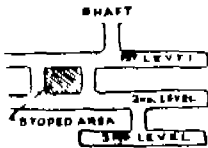
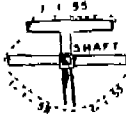
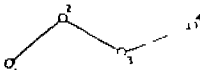
Designation : Owner/Agent/Manager.



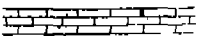
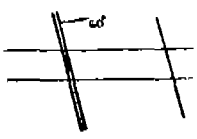
Date _____


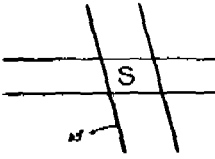


SECOND SCHEDULE CONVENTIONS FOR PREPARING PLANS AND SECTIONS (SEE REGULATION)		
	SYMBOLS	REMARKS
1 COORDINATE LINES (SHALL BE INDICATED BY FINE BLUE LINES AND THE COORDINATE VALUES SHALL BE WRITTEN IN BLUE INK AT EACH END OF THE LINES)		IN BLUE
2 BOUNDARY OF MINING LEASE HOLD WITH BOUNDARY PILLARS AND NAME OF ADJACENT PROPERTIES		IN RED
3 OUTCROP OF REEF, VEIN, LODE OR MINERAL		
4 OUTCROP OF DYKE (WHEN CONTACT AND DIP HAVE BEEN OBSERVED THESE SHALL BE INDICATED BY ARROWS AND DEGREES IN BLACK LINES)		
5 SUBSIDENCE OF SURFACE		IN RED


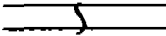


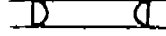

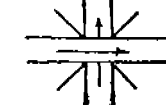
	SYMBOLS	REMARKS
6 PROHIBITED MINING AREA		IN RED
7 (A) BOREHOLE (VERTICAL) FROM THE SURFACE		IN RED
(B) BOREHOLES (INCLINED)		
(C) BOREHOLES (UNDERGROUND) THE DIRECTION AND ANGLE SHALL BE INDICATED BY AN ARROW AND THE NUMBER OF DEGREES FROM THE HORIZONTAL, WITH A PLUS SIGN, IF ABOVE THE HORIZONTAL, AND A MINUS SIGN, IF BELOW THE HORIZONTAL. THE POINT AT WHICH THE REEF, VEIN, LODE OR MINERAL IS CUT, SHALL BE SHOWN ON THE PLAN		IN RED
8. SHAFTS (THE MOUTHS OF SHAFTS, WHETHER AT THE SURFACE OR UNDERGROUND, SHALL BE INDICATED IN BLACK OUT-LINES ACCORDING TO THEIR SHAPE, AND EACH COMPARTMENT SHALL BE COLOURED HALF BLACK ON THE SHADED SIDE SO LONG AS THE SHAFTS ARE IN USE. WHEN THE SHAFTS ARE ABANDONED, THE HOLE SPACE OF THE SHAFT SHALL BE FILLED IN WITH BLACK INK.	    ABANDONED	

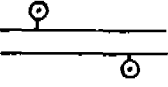


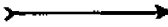

	SYMBOLS	REMARKS
<p>9. (A) WINZES (IN THE COUNTRY ROCKS) SHALL BE INDICATED BY BLACK OUTLINES</p> <p>(B) WINZES. WHERE THE WINZES HAVE BEEN SUNK ON THE REEF, VEIN, LODE OR MINERAL DEPOSIT, THE DIP MAY BE SHOWN BY ARROWS AND DEGREES IN BLACK FIGURES.</p>	 	
<p>10. ADIT. WHEN THE MINE IS WORKED FROM AN ADIT, THE CUTTING TO THE ADIT SHALL BE SHOWN BY BLACK LINES.</p>	 	
<p>11 CROSS-CUTS CROSS-CUTS AND SUCH PORTIONS OF THE DRIVES OR TUNNELS WHICH ARE NOT ON THE REEF, VEIN, LODE OR MINERAL SHALL BE DRAWN IN BLACK OUTLINES AND HATCHED WITH BLACK TRANSVERSE LINES. THE NUMBER SHALL BE SHOWN IN BLACK</p>		

	SYMBOLS	REMARKS
12. LEVELS (THE VARIOUS LEVELS AND TUNNELS MAY, AT THE OPTION OF THE MANAGER, BE INDICATED BY DIFFERENT COLOURS)		IN RED IN BLUE IN GREEN
13 VERTICAL PROJECTION OF WORKINGS (EACH LEVEL SHALL BE SHOWN IN THE SAME COLOUR AS CHOSEN FOR PLAN)		IN RED IN BLUE IN GREEN
14 DATE OF LAST SURVEY SHALL BE SHOWN ON DOTTED LINES DRAWN TO INDICATE THE ENDS OF THE WORKINGS.		IN BLUE IN RED IN GREEN
15 SURVEY LINES AND STATIONS SHALL BE SHOWN BY THE SAME COLOUR AS THE OUTLINES OF THE DRIVES THROUGH WHICH THEY PASS.		IN RED

	SYMBOLS	REMARKS
16 (a) PACKS AND SAND FILLING ON ANY REEF, VEIN, LODGE OR MINERAL SHALL BE SHOWN IN THE COLOUR ASSIGNED TO THE LEVEL OR TUNNEL		
(b) WASTE ROCK FILLING		
(c) GRANITE PACKWALLS		
17 (a) FAULT PLANES, SHALL BE INDICATED BY FIRM RED LINES, SHOWING THEIR STRIKE, AND WHEN THIS CANNOT BE DETERMINED, BY DOTTED RED LINES. THE DIRECTION AND DEGREE OF DIP SHALL BE INDICATED BY A SMALL ARROW ON THE DIP SIDE AND BY DEGREE WRITTEN IN BLACK FIGURES NEAR THE ARROW.		IN RED

SYMBOLS	REMARKS
<p>b) PAGMATITE INTRUSIONS</p>  <p>18. DYKES</p> <p>(WHEN DYKES ARE INTERSECTED IN THE WORKINGS, THEIR STRIKE AND THICKNESS SHALL BE INDICATED BY FIRM BLACK LINES THE DIRECTION AND DEGREE OF DIP OF BOTH FOOT AND HANGING WALLS SHALL BE INDICATED AS IN THE CASE OF FAULTS</p>  <p>THE SPACE MARKED 'S' SHALL BE TINTED IN THE COLOUR CHOSEN BY THE MANAGER)</p> <p>19. BENCH MARK</p>  <p>20. EVERY PERMANENT STATION OF THE UNDERGROUND SURVEY SHALL BE INDICATED ON THE PLAN BY A SMALL CIRCLE OF THE SAME COLOUR AS THE OUTLINES OF THE DRIVES ETC. AND MAY FILLED IN WITH THE COLOUR OF THE LEVEL IN WHICH IT IS SITUATED, IN ORDER THAT POINTS IN DRIVES OR CROSS-CUTS VERTICALLY OVER EACH OTHER MAY THUS BE READILY DISTINGUISHED.</p> 	<p>IN BLUE</p> <p>IN GREEN</p>

	SYMBOLS	REMARKS
21 BRICK, STONE OR CONCRETE VENTILATION STOPPING		IN RED
22 BRATICE.		IN RED
23 FIRE DAMS OR SEALS.		IN RED
24 WATER DAMS.		IN RED
25 DOORS		IN RED
26 REGULATORS		IN RED
27. AIR CROSSINGS		

	SYMBOLS	REMARKS
28 TELEPHONES		IN RED
29. UNDERGROUND AMBULANCE STATION (IN RED) ...		IN RED
30 DIRECTION OF AIR CURRENT		
1 INTAKE		IN BLUE
2 RETURN		IN RED
31 AUXILIARY FAN.		

[No. M-1-41 (8)/67.]
P. M. Menon, Jt. Secy.